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A HISTORY OF SEALIFT AND FORCE SUSTAINMENT OPERATIONS DURING THE SOMALIA INTERVENTION (1992-1994)

by

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March 1996

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This thesis thus provides a thorough chronology of events surrounding seaport operations at Mogadishu, Somalia. The work furthermore analyzes related logistical issues and problems in order to identify lessons learned from the expedition.

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A HISTORY OF SEALIFT AND FORCE SUSTAINMENT OPERATIONS DURING THE SOMALIA INTERVENTION (1992-1994)

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ABSTRACT

Military strategists expect U.S. forces to be involved in an increasing number of regional contingency operations of the sort conducted in Somalia from 1992 until 1994. The success of such large-scale humanitarian missions hinges on effective logistical operations, especially sealift. Planners of future missions, therefore, would greatly profit from the study of maritime operations during the intervention in Somalia.

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LIST OF ACRONYMS

AABFS	Amphibious Assault Buoyant Fuel System
AABWS	Amphibious Assault Buoyant Water System
AFB	Air Force Base
AMC	Air Mobility Command
APF	Afloat Prepositioning Force
ARFOR	Army Forces
ATU	Amphibious Task Unit
Bn	Battalion
BSSG	Brigade Service Support Group
CCT	Combat Control Team
CENTCOM	Central Command
CINCCENT	Commander-in-Chief, Central Command
CJTF	Commander, Joint Task Force
CMPF	Commander, Maritime Prepositioning Force
CNA	Center for Naval Analyses
COMPHIBGRU	Commander, Amphibious Group
COMPHIBRON	Commander, Amphibious Squadron
COMPSRON	Commander, Maritime Prepositioning Ships Squadron

CONUS	Contiguous United States
CRAF	Civil Reserve Air Fleet
DLA	Defense Logistics Agency
DoD	Department of Defense
ECG	Embarkation Control Group
FLO/FLO	Float-on/float-off
FSS	Fast Sealift Ship
FSSG	Force Service Support Group
GPD	Gallons per day
GPH	Gallons per hour
HAST	Humanitarian Assistance Survey Team
HRS	Humanitarian Relief Sector
JCS	Joint Chiefs of Staff
JOPES	Joint Operations Planning and Execution System
JTB	Joint Transportation Board
JTF	Joint Task Force
JTFSC	Joint Task Force Support Command
LASH	Lighter Aboard Ship
MAGTF	Marine Air-Ground Task Force
MARFOR	Marine Forces

MARFORPAC	Marine Forces Pacific
MCC	Movement Control Center
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MEU	Marine Expeditionary Unit
MHE	Material handling equipment
MPF	Maritime Prepositioning Force
MRE	Meal, ready to eat
MPS	Maritime Prepositioning Ship
MPSRON	Maritime Prepositioning Ships Squadron
MSC	Military Sealift Command
MSCFE	Military Sealift Command, Far East
MSCO	Military Sealift Command Office
MTMC	Military Traffic Management Command
MV	Motor Vessel
OPDS	Offshore Petroleum Discharge System
OPLAN	Operations Plan
OPORDER	Operations Order
OPP	Offload Preparation Party
QRF	Quick Reaction Force

RO/RO	Roll-on/roll-off
ROWPU	Reverse Osmosis Purification Unit
RRF	Ready Reserve Force
SALM	Single anchor leg mooring
SLRP	Survey, Liaison, and Reconnaissance Party
SPMAGTF	Special Purpose Marine Air-Ground Task Force
SS	Steam Ship
SWA	Southwest Asia
TPFDD	Time Phased Force Deployment Data
TRANS	Transportation
TRANSCOM	Transportation Command
U.N.	United Nations
UNITAF	United Task Force
UNOSOM	United Nations Operation in Somalia
USCENTCOM	United States Central Command
USCG	Unites States Coast Guard
USCINCCENT	Commander-in-Chief, United States Central Command
USN	United States Navy
USNR	United States Navy Reserve
USNS	United States Naval Ship

USFORSOM	United States Forces in Somalia
WWMCCS	Worldwide Military Command End Control System

I. INTRODUCTION

The following is a case study of U.S. sealift and force sustainment operations at Mogadishu supporting the United Nations military intervention in Somalia from December 1992 until March 1994. The purpose of the thesis is to analyze the logistical plans, decisions, and actions of participating U.S. commanders. A comprehensive chronology of significant events relating to operational logistics is provided. Attention focuses on the development and resolution of administrative, transportation, material handling, and security problems from the perspective of the Military Sealift Command (MSC). Such analysis is intended to identify lessons learned and produce recommendations useful for conducting similar future evolutions.

This chapter provides a brief history of the Somalia operation and establishes the significance of studying it from a logistician's perspective. It further discusses the scope, method, and intended application of the study.

A. SOMALIA INTERVENTION BACKGROUND: THE POLITICAL AND MILITARY CONTEXT

In order to properly evaluate the logistical operations at Mogadishu, it is important to first understand the political and military context in which they occurred. Basic knowledge of history surrounding the U.N. intervention in Somalia is therefore required. Such historical background demonstrates how careful analysis of Mogadishu seaborne operations is particularly significant.

The crisis which compelled the U.S. and the world to intervene in East Africa might well have been predicted as early as 1960 when Somalia gained independence. Approximately the size of New England, the new republic was the arbitrary union of British Somaliland in the North and Italian Somalia in the South. The country's 6.7 million citizens, factionalized into numerous tribes, populate a region long plagued by severe drought. [Ref. 1: p. 6] All the elements for chaos in the Horn of Africa were present for decades and merely awaited some political catalyst.

In 1991, the government of General Mohammed Siad Barre collapsed after a disastrous war with Ethiopia and subsequent revolt of political rivals. Barre fled Somalia, and a bloody civil war quickly ensued between government loyalists and a multitude of contentious clans. The combined effects of tribal warfare, disease, and famine resulted in over 300,000 deaths by the summer of 1992. Furthermore, some 4.5 million Somalis were starving, and 800,000 were taking refuge in neighboring states such as Kenya. Government offices, the military, and constabularies disappeared. Most economic institutions likewise perished. Competing rival chieftains, or warlords, provided the only remaining authority in Somalia. [Ref. 1:p. 7]

Alarmed by the extent of the tragedy in East Africa, U.N. Secretary Boutros Boutros-Ghali inspired a series of Security Council resolutions intended to restore order. In January 1992, the council imposed an embargo on arms shipments to Somali combatants by passing Resolution 733. Ghali's leadership further prompted the passage of Security Council Resolution 751 on 24 April 1992. The most noteworthy of the crisis, this resolution committed the U.N. to the peacekeeping and humanitarian operation known as UNOSOM. The operation was to be supervised by the Secretary General and directed by the U.N. Special Representative to Somalia. Fifty observers were to maintain a cease-fire in Mogadishu, and a security force of five hundred men was to safeguard the delivery of humanitarian supplies. [Ref. 1:p. 9]

This initial U.N. effort, however, suffered from poor planning, inadequate material support, and embarrassing delays. UNOSOM observers did not arrive on scene until 23 July 1992, and the security force was delayed until 12 August when a leading warlord, Mohammed Farah Aideed, finally granted his consent. As much as ninety percent of food and other humanitarian supplies were being diverted to armed gangs as tribute for protection of relief convoys and warehouses. On 28 August 1992, the Security Council resolved to send an additional 3,500 U.N. troops to secure relief efforts. By year's end, however, the contingent had not yet arrived. [Ref. 1:pp. 9-10] Clearly the UNOSOM effort lacked the necessary resolve and resources of a military superpower.

Pressed by emotional media reports, public sentiment, and the prospect of UNOSOM failure, President George Bush could no longer resist U.S. intervention in East Africa. He and his successor, Bill Clinton, would escalate America's involvement in three distinct phases (Table 1):

1. Operation Provide Relief (UNOSOM I),
2. Operation Restore Hope (UNITAF), and
3. USFORSOM (UNOSOM II) [Ref. 2:p. 15].

Operation	Dates	UN Security Council Resolution	U.S. Commander
Provide Relief (UNOSOM I)	15 Aug 1992- 9 Dec 1992	UNSCR# 751 dtd 24 Apr 1992	(HAST-then JTF) BG Frank Libutti, USMC
Restore Hope (UNITAF)	9 Dec 1992- 4 May 1993	UNSCR# 794 dtd 3 Dec 1992	LTG Robert B. Johnston, USMC
USFORSOM (UNOSOM II)	4 May 1993- 31 Mar 1994	UNSCR# 814 dtd 26 Mar 1993	MG Thomas M. Montgomery, USA

Table 1. Operational Phases of the Somalia Intervention [Ref. 2]

Extensive military resources were to be applied in the largest expedition since the Gulf War. The mission of U.S. forces, however, was to be initially limited. The expedition was to establish a secure environment throughout Somalia, ensure the unmolested distribution of

humanitarian supplies, and complete an orderly transfer of control back to the U.N. [Ref. 1: p. 11]

1. UNOSOM I (Operation Provide Relief)

Operation Provide Relief, the U.S. contribution to UNOSOM, was initiated on 15 August 1992 and lasted until early December. During such time, the U.S. Central Command, or CENTCOM, accomplished three principal objectives. First, it deployed a Humanitarian Assistance Survey Team (HAST) to ascertain relief requirements in Northern Kenya and Somalia. Second, it established the Joint Task Force (JTF) which conducted the airlift of emergency supplies to the region. Finally, CENTCOM deployed C-141 and C-130 aircraft to Mombasa and Wajir, Kenya to fly daily relief sorties to secure locations in Somalia. Provide Relief air operations eventually delivered 28,000 metric tons of relief supplies. Twenty sorties carrying 150 metric tons was the daily average. Nevertheless, deteriorating security in Somalia forced an end to this initial phase.v [Ref. 2:pp. 14-15]

2. UNITAF (Operation Restore Hope)

When a U.N.-charter relief ship was fired upon in Mogadishu harbor in November, the utility of military occupation became obvious. Under the authority of Security Council Resolution 794, President Bush announced the commencement of Operation Restore Hope on 4 December 1992. The U.S. would lead and provide the dominant military component of the United Task Force (UNITAF), a multinational coalition security force, according to the terms of the resolution. [Ref. 2:p. 16] The U.N. mandate tasked UNITAF to (1) provide humanitarian relief and (2) enforce the peace in southern Somalia with "whatever force necessary" as per Chapter VII of the resolution [Ref. 1:p. 11]. The U.S. thus committed itself to a mission requiring extensive sealift and airlift, complex logistical planning and coordination, and many unforeseen risks.

CENTCOM developed the concept of operations for the expedition and established four objectives for UNITAF. These objectives were to be accomplished in four corresponding phases:

1. Introduction of Forces. Major airports, seaports, key installations, and food distribution points were to be secured [Ref. 3:p. 4].

2. Humanitarian Relief Sectors (HRS). Eight sectors were to be established and assigned to coalition units. Security was to be assured for relief convoys and distribution points in each sector.

3. Stabilization. Sufficient time was to be allowed for relief operations to take effect. Planning for the transition back to U.N. control was to be conducted.

4. Transition to UNOSOM II and Redeployment. UNITAF was to retain control of each HRS until a secure transfer to U.N. forces could be completed. U.S. and coalition forces would redeploy upon relief.

Operation Restore Hope would proceed as the situation dictated, not according to an established time line. [Ref. 1:pp. 11-14]

Lieutenant General Robert B. Johnston, USMC, was appointed commander of the U.S. Joint Task Force and, as such, the coalition commander. U.S. forces under his command included the 16,000 men of the First Marine Expeditionary Force (I MEF) at Camp Pendleton and 10,000 soldiers of the Army's Tenth Mountain Division at Fort Drum. The Air Force contributed one C-130 tactical airlift squadron and 600 men. Furthermore the Navy deployed one carrier battle group, a three-ship amphibious task unit (ATU), and ships of the Maritime Prepositioning Ships Squadron Two (MPSRON-2) based at Diego Garcia. [Ref. 3:p. 4]

The first phase of Operation Restore Hope began at 0500 hours on 9 December 1992 with the landing of a Marine Expeditionary Unit (MEU) at Mogadishu. The unit occupied both the seaport and airport without opposition. The port of Kismayu and the airstrip at Bardera was later seized by the MEU. Four other inland airstrips were also taken by coalition forces. [Ref. 3:pp. 9-10] The considerably more difficult tasks of deploying, provisioning, and redeploying the bulk of coalition forces, however, preoccupied operation commanders for several months.

U.S. sealift and airlift operations reached their zenith during Operation Restore Hope. In total, over 38,000 troops from twenty-one nations were deployed during this phase, 28,000 of whom were Americans [Ref. 2:p. 17]. When officially succeeded by UNOSOM II in

May 1993, the operation covered all of southern Somalia, forty percent of the country and the area hardest hit by famine [Ref. 1:p. 14]

In contrast to UNOSOM I, Operation Restore Hope met all CENTCOM objectives due to superior planning and resources. By confiscating vehicle-mounted weapons from locals, coalition forces vastly improved security. As a result, relief supply distribution proceeded without significant interruption, and the prospects for the Somali population improved markedly. With the immediate threat of mass starvation diminished, U.S. commanders looked to an orderly transition to U.N. control of operations. [Ref. 2:p. 17]

3. UNOSOM II

The transition, however, was not smooth. The U.N. Secretary General, reluctant to assume responsibilities in Somalia until U.S. forces could disarm the warring clans, urged UNOSOM II's delay [Ref. 2:p. 18]. The U.N. now planned an ambitious "nation-building" program for Somalia: a factional reconciliation process, economic reconstruction, and reestablishment of local police forces. The U.N. was hesitant to reduce force size given continued sporadic violence in Somalia, a possible threat to its expanded mission. [Ref. 4:p. 6]

Nevertheless, the U.N. Secretary General finally proposed a concept of operations on 3 March 1993 based on strategy recommended by the U.S. State Department and the Joint Chiefs of Staff. The Security Council accepted this proposal and authorized the UNOSOM II peace enforcement operation on 26 March.

Like the preceding operation, the UNOSOM II would evolve in four phases:

1. Transfer of Control. U.S.-led forces were to be relieved by U.N. units once a secure environment in each relief sector was achieved.

2. Security Consolidation and Expansion. Somali government institutions and infrastructure were to be rehabilitated.

3. Transition to Civilian Control. Legitimate Somali authority was to be restored as political institutions were reconstructed.

4. Redeployment of Forces. UNOSOM II would conclude once the Somali government was sufficiently stable. [Ref. 1:p. 15]

Operations were to extend to Somaliland despite the region's untimely declaration of independence [Ref. 2:p. 18]. The U.N., with the backing of the newly-installed Clinton Administration, thus resolved to go well beyond the its original humanitarian mission.

UNOSOM plans called for the deployment of 20,000 U.N. combat troops and an additional 8,000 logistical support personnel. Special Representative to the Secretary General, U.S. Navy Admiral Jonathan Howe, would lead the effort with Turkish Lieutenant General Bir as commander of the U.N. multinational force. [Ref. 4:p. 6] A U.S. contingent of 3,000 personnel would participate principally to provide logistical support for the operation [Ref. 2:p. 18]. As insurance, the U.S. would also maintain a Quick Reaction Force (QRF) commanded by Bir's deputy, U.S. Major General Thomas Montgomery. Some 1,300 combat troops of the QRF could be deployed in the event of sudden hostilities. [Ref. 5:p. 17]

On 4 May 1993, the U.S. relinquished control of operations in Somalia to the UNOSOM II force commander. Although military sealift requirements for the U.S. were diminished with the end of Operation Restore Hope, logistical requirements remained daunting. The U.S. still shouldered considerable force sustainment responsibilities for the eleven months of UNOSOM II. [Ref. 2:pp. 19-20]

UNOSOM II failed to restore stability in Somalia. The U.N.'s ambitious attempt to reconstruct the country's political institutions ultimately caused native resentment and outright hostility. Threatened by the U.N. regime, clan leader Mohammed Aideed inspired attacks on U.N. peacekeepers. Twenty-four troops of the Pakistani contingent were killed in an ambush on 5 June 1993. In retaliation, the Security Council passed a resolution demanding "the arrest and detention for prosecution, trial, and punishment" of the Somali assailants - namely Aideed. The U.S. deployed four hundred troops of its Joint Task Force Ranger under the command of Major General William Garrison to apprehend Aideed. [Ref. 5:p. 17] UNOSOM II became consequently entangled in the Somali political quagmire from which it could not be extricated.

The collapse of UNOSOM II came after a series of raids conducted by Joint Task Force Ranger beginning on 24 August. During the seventh and final raid on 3 and 4 October,

U.S. forces engaged in bitter skirmishes with Somali clansmen, presumably Aideed supporters. Eighteen Americans were killed in action with eighty-four wounded. [Ref. 5:p. 17] The incident sparked criticism of U.S. foreign policy and prompted the President Clinton to announce a gradual withdrawal of U.S. forces from Somalia. The Somalia expedition for U.S. forces came to an ignominious end on 31 March 1994. [Ref. 2:p. 20]

Conditions governing the conduct of sealift operations at Mogadishu in 1992 and 1993 contrasted sharply with those prevailing during Operation Desert Storm. In the winter of 1991, the Persian Gulf allies of the U.S. provided well-managed, modern port facilities safe distances from the scene of combat. Cargo delivered by allied charters was predominantly war material for use against the Iraqi armed forces. Conversely, Somalia lacked any recognizable civil authority or suitable port infrastructure. Mogadishu was also susceptible to frequent civil unrest which challenged port security. Further complicating logistics management, Operation Restore Hope involved the transport and handling of both war material *and* humanitarian supplies. Nevertheless, the latter expedition did benefit from the experience gained during the former. The operation in Somalia, of course, was less an emergency to participating forces and smaller in scale.

B. SIGNIFICANCE OF RESEARCH

A thorough study of logistical operations during Operation Restore Hope and UNOSOM II is important because occasions to conduct similar operations under similar circumstances are likely to be more frequent. With the demise of the Soviet Union and subsequent end of the Cold War, a consensus has emerged among military strategists: (1) that U.S. forces should be prepared for "low-intensity engagements" and "operations other than war" and (2) that operations in the world's littoral regions will grow in frequency and importance. These predictions are prominently reflected in the President's *National Security Strategy* and *National Military Strategy of the United States* produced by the Joint Chiefs of Staff. The desperate conditions in Somalia appear to support the predictions. It is an archetypical case that strategists envision in the post-Cold War era: a Third World political crisis requiring multinational intervention to suppress hostilities and provide humanitarian

assistance. [Refs. 6 and 7] Operation Restore Hope is therefore a convenient model, the analysis of which may be applied recurrently in similar operations.

UNITAF and UNOSOM logistics, particularly sealift operations, should be especially well scrutinized. The demands on U.S. armed forces created by the new global political regime imply greater reliance on strategic sealift to project and sustain U.S. power abroad. Diminished U.S. presence overseas intensifies this reliance. [Ref. 7:p. 24] Operation Restore Hope is the case in point, foreshadowing an expanded role for U.S. sealift assets. Strategic planners, therefore, should have some insight into the operation from a transportation perspective.

This thesis thus serves to fill a significant gap in the analysis of the Restore Hope and UNOSOM II operations. Literature concerning the diplomatic and tactical dimensions of the intervention in Somalia is voluminous. Unfortunately, however, considerably less attention has been paid to the logistical aspects of an expedition largely dependent on effective seaborne transportation management. Although the U.S. Army, Marine Corps, and Air Force have published a few accounts of their logistics operations in Somalia, less such material exists for the Navy's benefit. Given the importance of sealift to the Somalia operations and future U.S. military strategy, a history of the expedition from a Navy perspective is required.

C. RESEARCH SCOPE AND METHOD

This case study is confined primarily to Military Sealift Command (MSC) operations during the Restore Hope and UNOSOM II operations from December 1992 until March 1994. Particular emphasis is placed on the decisions and activities of local commanders. The activities of other units - such as the Military Traffic Management Command (MTMC) - including airlift and combat operations are discussed as they relate to sealift operations.

The thesis details events at the Mogadishu port facility to appraise the decisions of local Navy commanders as well as MSC plans and policy. This includes the following:

1. The identification of key players within the MSC and their respective roles in managing sealift and force sustainment operations (Chapter II);

2. A description of interrelationships between MSC and units with stakes in sealift operations, particularly other logistics commands (Chapter II);

3. A complete chronology of significant events impacting sealift and sustainment operations during Operation Restore Hope and UNOSOM II (Chapter II);

4. An analysis of important issues affecting operational logistics at Mogadishu including problems with planning, port control, sealift and sustainment, contracting, and security (Chapter III);

5. An assessment of the effectiveness of sealift and sustainment operations and how well logistical problems were resolved (Chapter III);

6. The identification of lessons learned about the conduct of sealift and sustainment operations (Chapter IV); and

7. A set of recommendations applicable to operations similar to the one conducted at Mogadishu (Chapter IV).

Based on the experience of local MSC decision-makers, the thesis draws conclusions about broader transportation management issues.

Research data about the Mogadishu sealift operations were gathered from the following sources:

1. Published studies and accounts including testimony before the Senate Committee on Armed Services, documents of the Naval War College and Center for Naval Analyses (CNA), and works of the Rand Corporation and Institute for National Strategic Studies;

2. Statements of naval officers who participated at the scene of operations;

3. Interviews with knowledgeable personnel of the MSC.

Thesis conclusions represent some of the opinions advanced by these sources.

D. RESEARCH APPLICATION

The U.S. Navy and MSC, in particular, are the intended primary beneficiaries of this study. Naval strategic planners may be able to apply the lessons learned and recommendations from the thesis in order to improve future sealift and force sustainment operations

similar to Operation Restore Hope and UNOSOM II. By recording the successes and failures of the MSC in Somalia, the nation may be able to more effectively project its influence from the sea in response to an environment of increasing global uncertainty.

II. CHRONOLOGY OF MOGADISHU PORT OPERATIONS

A proper understanding of Mogadishu port logistical issues requires knowledge of the pertinent events surrounding the operation. This chapter therefore provides a thorough chronology of port operations beginning with Central Command (CENTCOM) crisis action planning and ending with the final withdrawal of U.S. ground forces and MSC ships. Key logistics decision-makers and the roles of their respective commands are introduced in the course of this account. The chronology demonstrates the uniqueness of the operation and thus lays the groundwork for thoughtful discussion of the lessons learned from it.

The Mogadishu operation was unique in that other recent humanitarian logistical missions were so comparably minor in terms of scope and duration. The operation further tested the limits of U.S. logistics doctrine, organization, training, and equipment. [Ref. 8:p. 2] For example, a four-ship squadron of Maritime Prepositioning Force (MPF) ships theoretically carries all supplies necessary to support a 16,500-man Marine Air-Ground Task Force (MAGTF) for thirty days. However, during Operation Restore Hope, an MPF became the principal source of supplies for more than 30,000 coalition forces during the first fifty days of operations. [Ref. 9:p. 28] Of course, the Somalia logistics operations were limited in terms of combat support requirements. The intervention did not call for extensive support of armored vehicles, artillery, fixed-wing aircraft, or other major weapons systems. Nevertheless, given the absence of suitable host-nation infrastructure, Mogadishu port logistical operations remained particularly daunting. [Ref. 8:p. 31]

U.S. operations at the port of Mogadishu can be segmented into four distinct periods:

1. 20 November - 8 December 1992. CENTCOM develops plans for the operation. U.S. forces make subsequent preparations.

2. 9 December 1992 - 27 January 1993. Marine Forces (MARFOR) combat service support units provide logistical support to coalition forces from MPF stocks.

3. 28 January - 3 May 1993. Army personnel attached to a JTF support component bear responsibility for force sustainment and other logistical operations in the theater.

4. 4 May 1993 - 31 March 1994. UNOSOM II controls continuing sustainment operations until the withdrawal of U.S. forces. [Ref. 9:p. 15]

The chronology details the significant events affecting port operations in each period.

A. PLANS AND PREPARATION (20 NOVEMBER - 8 DECEMBER 1992)

Noting the apparent failure of Operation Provide Hope to improve conditions in a chaotic Somalia in the fall of 1992, the CENTCOM staff developed a broad concept of operations long before receiving the order to act [Ref. 8:p. 5]. On 20 November, USCENTCOM advised the First Marine Expeditionary Force (I MEF) commanded by Lieutenant General Johnston to prepare for possible operations in support of the humanitarian effort in Somalia. Although I MEF had expected to assist the insertion of additional Pakistani U.N. troops into the theater, this was the first warning of imminent involvement of American ground forces.

1. Planning Process

On 21 November, a I MEF planning cell from Camp Pendleton arrived at MacDill AFB to begin constructing joint plans for military intervention in Somalia with the CENTCOM staff. Having prepared the preliminaries for the Warning Order and Commander's Estimate of the Situation, the planning cell returned to Camp Pendleton on 23 November. The Commander in Chief of the U.S. Central Command (USCINCCENT), Army General Hoar, briefed the Joint Chiefs of Staff (JCS) the following day. Although he advised the JCS against military involvement in Somalia, he revealed the tentative plans for such a contingency. He further advised that a U.N. endorsement of U.S. intervention be a precondition if military action must be taken.

The JCS, however, recommended military action contingent on U.N. approval when they briefed President Bush on 25 November. Thus, on the same day, the formal planning process began with the creation of a Joint Task Force (JTF) Somalia Future Planning Cell. Under the direction of the I MEF G-3 Future Operations Officer, the planning cell initiated the crisis action planning which would ultimately produce a CENTCOM Operations Order (OPORDER). [Ref. 8:p. 35]

To manage the impending deployment, the planning cell employed the Joint Operations Planning and Execution System (JOPES). The system was used successfully for command and control of previous deployments and seemed well-suited for the Somalia contingency. [Ref. 8:p. 14]

JOPES works with a Time Phased Force Deployment Data (TPFDD) base developed by a JTF. The TPFDD details which units are to be deployed, unit composition in terms of cargo and personnel, the location of units, and where they must be delivered. [Ref. 10:p. 11] The database is loaded into the Worldwide Military Command End Control System (WWMCCS), a computer system to which the JTF, CENTCOM staff, and service components have access [Ref. 11:p. 34]. Once a TPFDD base is fully developed for a given operation, planners have access to a single, reliable framework for efficient transportation management. [Ref. 10:p. 11]

Complete data base development, however, sometimes takes eighteen months under normal circumstances, and there was no preexisting TPFDD for the Somalia crisis [Ref. 10:p. xii]. Consequently, the planning cell derived a TPFDD base from OPLAN 1002 used during Operation Desert Shield in 1991. JTF planners revised this TPFDD throughout the operation as events and force requirements dictated. [Ref. 8:p. 11]

2. Concept of Operations

CENTCOM planners anticipated the eventual deployment of approximately 28,000 U.S. active duty personnel and their equipment to Somalia. Most would be light forces. [Ref. 10:p. 3] These forces would by transported to the theater as follows:

1. Army and Marine Corps personnel would be flown from the Continental U.S. (CONUS) and Europe aboard aircraft of the Air Mobility Command (AMC) and Civil Reserve Air Fleet (CRAF). Flights would originate from Griffiss AFB on the East Coast and March AFB on the West Coast, 8,044 and 10,439 miles from Mogadishu respectively.

2. Army equipment would be mostly shipped from the CONUS seaports of Bayonne, Norfolk, Savannah, and Beaumont aboard vessels chartered by the MSC. TRANSCOM also initially activated three Fast Sea lift Ships (FSSs) for the task. Additional supplies and equipment would come from prepositioned ships at Diego Garcia.

3. The bulk of Marine Corps equipment and supplies would arrive in Mogadishu aboard four Maritime Prepositioning Ships (MPSs) at or in the vicinity of Diego Garcia. The ships could collectively support a Marine Expeditionary Brigade (MEB) of 16,500 men for a month. [Ref 10:pp. 3-9]

The CENTCOM planning cell expected no host nation assistance and assumed that virtually all infrastructure would have to be transported with deploying forces [Ref. 10:p. 5]. Of course, strategic airlift and sealift operations would begin only after U.S. marines seized the Mogadishu airport and harbor facilities during Phase I of the operation.

Seizure of these key Mogadishu facilities was the responsibility of a Special Purpose Marine Air-Ground Task Force (SPMAGTF) deployed aboard a four-ship Amphibious Task Unit (ATU) in the Indian Ocean. The ATU consisted of the amphibious warships U.S.S. *Tripoli* (LPH-10), U.S.S. *Juneau* (LPD-10), and U.S.S. *Rushmore* (LSD-47) as well as MV *Lummus*, an MPF ship ordinarily assigned to Maritime Prepositioning Squadron Three (MPSRON-3) at Guam. [Ref. 8:p. 36] A combination container and roll-on/roll-off ship (RO/RO), MV *Lummus* was an unusual addition. Yet, because the ATU lacked two of its standard five amphibious ships, the MPF ship partly compensated for reduced ATU cargo capacity. [Ref. 11:p. 39] The combination of ships was known as "three plus one," and was the first time an MPF ship deployed in company with amphibious warships [Ref. 8:p. 28]. The unique unit set a course for Mogadishu on 30 November [Ref. 8:p. 36]. Aboard were 1,800 marines [Ref. 10:p. 3].

3. Unit Preparation and Organization (1-4 December)

On 2 December, an Offload Preparation Party (OPP) and Survey, Liaison, and Reconnaissance Party (SLRP) left CONUS for Mombasa, Kenya. There they would meet MV *Lummus* and begin preparations for sealift operations at Mogadishu. OPPs for three MPF ships assigned to Maritime Prepositioning Squadron Two (MPSRON-2) left the same day for Diego Garcia. [Ref. 8:p. 36]

Meanwhile, efforts to formulate plans for the now inevitable Somalia intervention reached a furious pace. Warning orders reached selected commands on the first week of December. The Army began conducting regular top-level briefings on Somalia and activated

a crisis response cell on 2 December. Within the next few days, TRANSCOM and MTMC established dedicated operations centers; AMC began Operation Restore Hope planning and reporting procedures, and MSC identified ships for deployment. [Ref. 10:p. 8]

At his headquarters in Washington, D.C., MSC commander Vice Admiral Michael Kalleres and his staff struggled to coordinate the details of a sealift operation to occur more than 8,000 miles away. Having received an "informal heads-up" in late November, MSC staff conducted a market survey for tugboats and chartered three to assist in Mogadishu port operations [Ref. 12]. Furthermore, they selected three harbor pilots for the operation, one American and two Anglo-Kenyans [Ref. 13]. By the first week in December, MSC activated three of eight FSSs [Ref. 12]. The command also notified the operating companies of the MPF ships to be deployed, Maersk Line Limited and the AMSEA Corporation. [Ref. 14]

It was indirectly through the operating companies that advanced word of the impending operation first reached the MPSRON-2 staff aboard MV *Phillips*, the squadron flagship moored at Diego Garcia. MPSRON-2 officers received warning of possible MPF tasking on 2 December from the ships' masters. The masters relayed information given to them by their operating company representatives. The squadron staff thus anticipated sortie orders for the MPF ships and perhaps some other ships controlled by MPSRON-2. [Ref. 14]

Captain Robert Allee, commander of MPSRON-2 (COMPSRON TWO), controlled fifteen ships divided into two squadrons forward-deployed at Diego Garcia. These squadrons are known collectively as the Afloat Prepositioning Force (APF). The first squadron, the Maritime Prepositioning Force (MPF) consisted of five ships: MVs *Anderson*, *Bonnyman*, *Phillips*, *Hauge*, and *Baugh* -- all operated by Maersk Line Limited. *Hauge* and *Baugh* were in CONUS for their maintenance cycle. The remaining ten ships comprised the second squadron, Prepositioned Ships Squadron Two. [Ref. 14]

COMPSRON-TWO's MPF ships are *Hauge*-class, combination container and ro-ro ships specifically designed for Marine Corps prepositioning. They are powered by a single, slow-speed diesel, and are capable of making seventeen knots. Slightly smaller than MV *Lummus*, a *Hauge*-class ship can carry 332 containers and has 12,000 square feet available

for Marine vehicles. Each ship is chartered from Maersk Line Ltd. (U.S.A.) for twenty-five years by MSC. Annual charter costs are roughly $12 million per ship. [Ref. 15:p. 22]

The prepositioned squadron ships mainly carry consumable supplies for the Army, Air Force, and Navy forces. Ammunition and other dry cargo are carried aboard four LASH (Lighter Aboard) Ships at Diego Garcia. The ordnance is contained in several climate-controlled barges stacked in a LASH cargo hold and on its main deck. The ammunition barges can be discharged in stream at ports where pier services are unavailable. [Ref. 15:p. 21] LASHs also carry two tugs to maneuver the barges to delivery points ashore. In addition to the LASHs, the prepositioned squadron includes cargo fuel tankers and an Army watercraft carrier MV *American Cormorant.* [Ref. 14]

Which specific ships would be ordered to Somalia remained uncertain to the MPSRON-2 staff on 3 December as they awaited tasking. [Ref. 14]

While individual commands continued to make eleventh-hour preparations, CENTCOM devised an organizational structure for the upcoming expedition. CINCCENT assumed operational control of I MEF on 2 December and designated General Johnston as Commander, Marine Forces (MARFOR) Central Command . USCINCCENT next established the JTF headquarters on the following day with General Johnson as its commander (CJTF). [Ref. 8:pp. 35-36] I MEF staff would largely comprise JTF headquarters. In Somalia, the CJTF would command a Marine component of the I MEF, an Army component consisting of Tenth Mountain Division soldiers, and certain local Air Force and Navy units. [Ref. 8:p. 1] MARFOR and its MPF assets would provide initial logistical support to the JTF [Ref. 9:p. 25]. A chain of command was thus established for Phases I and II of Operation Restore Hope.

4. Execution of Orders

On 4 December, the President ordered a "substantial American force" into Somalia [Ref. 10:p. xi], and USCINCCENT released its OPORDER to participating units on 5 December [Ref. 8:p. 38]. Units afloat responded immediately.

COMPSRON TWO ordered his three MPF ships at Diego Garcia to sortie upon receipt of the OPORDER. MVs *Anderson, Bonnyman,* and *Phillips* - commodore and staff aboard - departed for Mogadishu on 5 December. The ships' Offload Preparation Parties

arrived in Diego Garcia the previous day and were embarked. [Ref. 14] The MPF headed west across the Indian Ocean for a six-day, 1,900-nautical mile voyage (Figure 1).

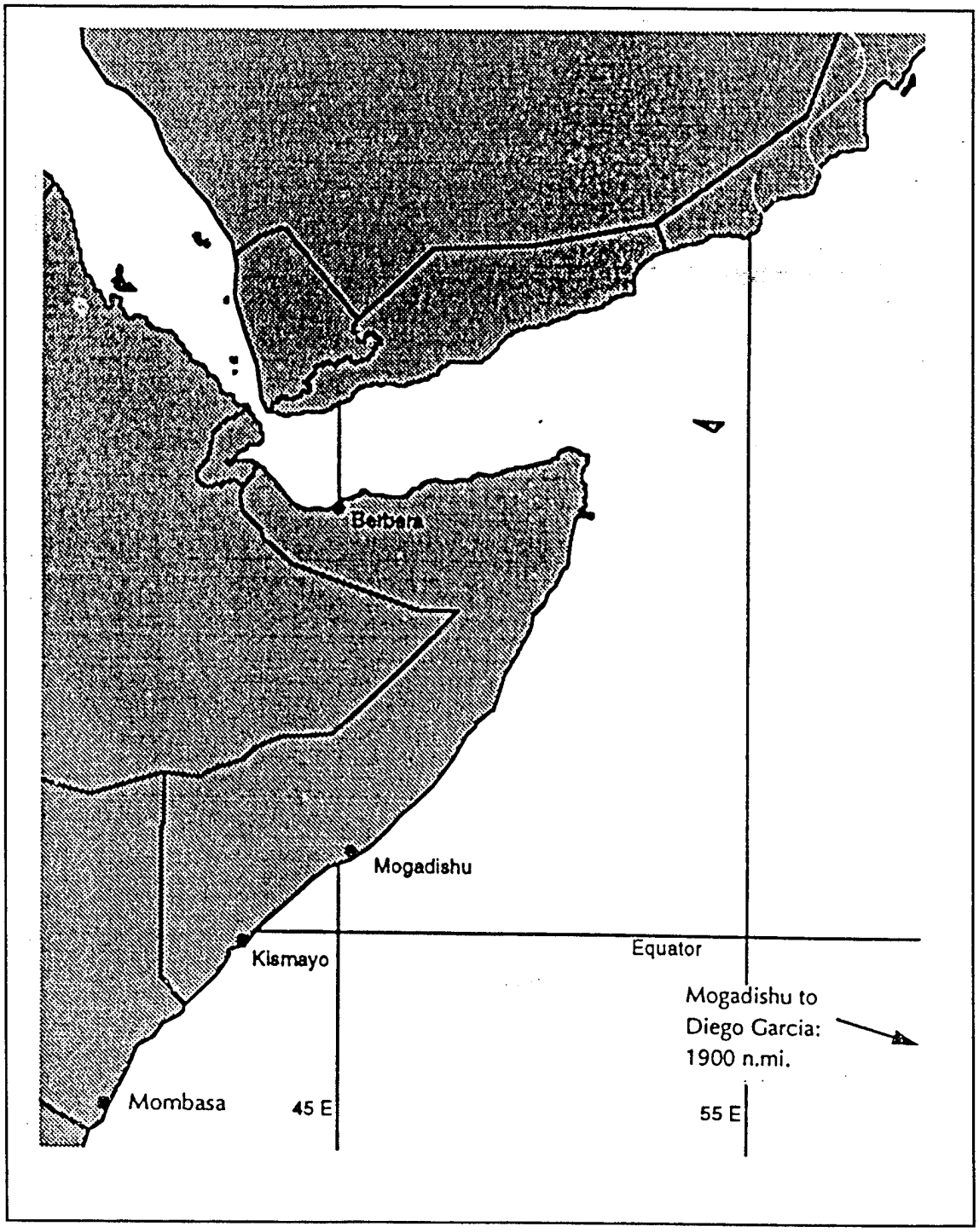

Figure 1. Map of East Africa [Ref. 8]

Also on 5 December, the *Tripoli* ATU arrived on station twenty-five miles off Mogadishu in preparation for the SPMAGTF landing. MV *Lummus*, having detached from the ATU the previous day, was headed for Mombasa to receive its OPP and the SLRP. The parties arrived in Mombasa on 4 December and embarked two days later when the *Lummus* reached port. The ship rejoined the ATU on station on 8 December.

The Commander, Amphibious Group Three (COMPHIBGRU THREE), Rear Admiral Perkins, was designated as MPF commander (CMPF, Somalia) for the operation on 6 December [Ref. 8:p. 38]. The admiral reassigned the Commander Amphibious Squadron Five (COMPHIBRON FIVE), Captain Boyce, and his officers as his staff [Ref. 15]. The next day, before leaving for Mogadishu, the newly-assigned CMPF joined the CJTF Somalia Future Planning Cell at I MEF headquarters at Camp Pendleton. [Ref. 8:p. 38] Meanwhile, the JTF staff validated the first five days TPFDD for the operation [Ref. 11:p. 34]. With D-day only a few days distant, the initial steps of the deployment were began to proceed with some coordination.

B. DEPLOYMENT: MARFOR LOGISTICAL SUPPORT PERIOD (9 DECEMBER 1992 - 27 JANUARY 1993)

Operation Restore Hope began on the morning of 9 December 1992, D-day, with the landing of the 15th MEU (Marine Expeditionary Unit) from the *Tripoli* ATU. At 0430 hours local time, H-hour, a Marine rifle company of 140 men embarked in rigid raider craft seized "Objective Bravo," the Mogadishu port facility. Simultaneously to the south, a second contingent of one rifle company and an amphibious assault vehicle platoon landed ashore and occupied the Mogadishu airport, "Objective Alpha." A reserve force landed ashore fifteen minutes later in raider craft to reinforce the contingent at the airport. [Ref. 3:pp. 14-16]

Because Colonel Gregory Newbold, the SPMAGTF commander [Ref. 15: p. 35], was uncertain about native anti-aircraft capabilities, the marines landed in surface craft [Ref. 8: p. 38]. The only "opposition" to the insertion, however, came from curious unarmed Somalis at the seaport who were dispersed with three rifle shots, the only shots fired during D-day. [Ref. 3:p. 16]

With the objectives secured, the SPMAGTF commander felt confident enough to employ aircraft. He therefore dispatched an additional 440 marines to the airport, the scene of greatest native activity, to supplement the 725-man occupying contingent [Ref. 3:p. 16]. An Air Force Combat Control Team (CCT) accompanied the Marine reinforcements and quickly established air traffic control over the airfield. Two C-141 cargo aircraft carrying more Air Force personnel arrived only a few hours later, [Ref. 15:p. 35] the first AMC aircraft of the operation to land in Mogadishu [Ref. 11:p. 25]. By noon, the first units of I MEF landed in Mogadishu aboard AMC passenger aircraft [Ref. 8:p. 38]. The airport was fully operational (Figure 2).

Meanwhile, the SLRP flew ashore by helicopter and met divers from the *Tripoli* ATU at the port facility. The SLRP consisted mainly of U.S. Coast Guard and Navy Reserve personnel and included harbor pilot Captain Buttner, USNR. The divers were Navy SEALS. [Ref. 13] Together the parties began a detailed hydrographic survey of the harbor to ascertain the feasibility of a pierside MPF offload [Ref. 8:p. 38]. What the party encountered was appalling.

The port was utterly devastated. Pier utility services like electricity, water, steam, and fuel were nonexistent. Derelict yard cranes, forklifts, and other neglected vehicles were scattered about the area. Two tugboats were left rusting at the pier unattended. Debris and human feces littered the facility. The SLRP encountered conditions which defied the worst expectations of military planners.

Furthermore, looting of port warehouses by natives continued with impunity. During UNOSOM I, relief agencies constructed a wall of containers stacked three high around the facility perimeter for security. Nevertheless, native youths succeeded in stealing grain from U.N. stores despite the Marine occupation. During the day, individuals breached the perimeter, and at night gangs attempted to enter the facility by force. Although SPMAGTF personnel could deter looters throughout the compound during the day, they could only secure the area within the wall at night. [Ref. 8:pp. 38-40] The pilferage continued for days.

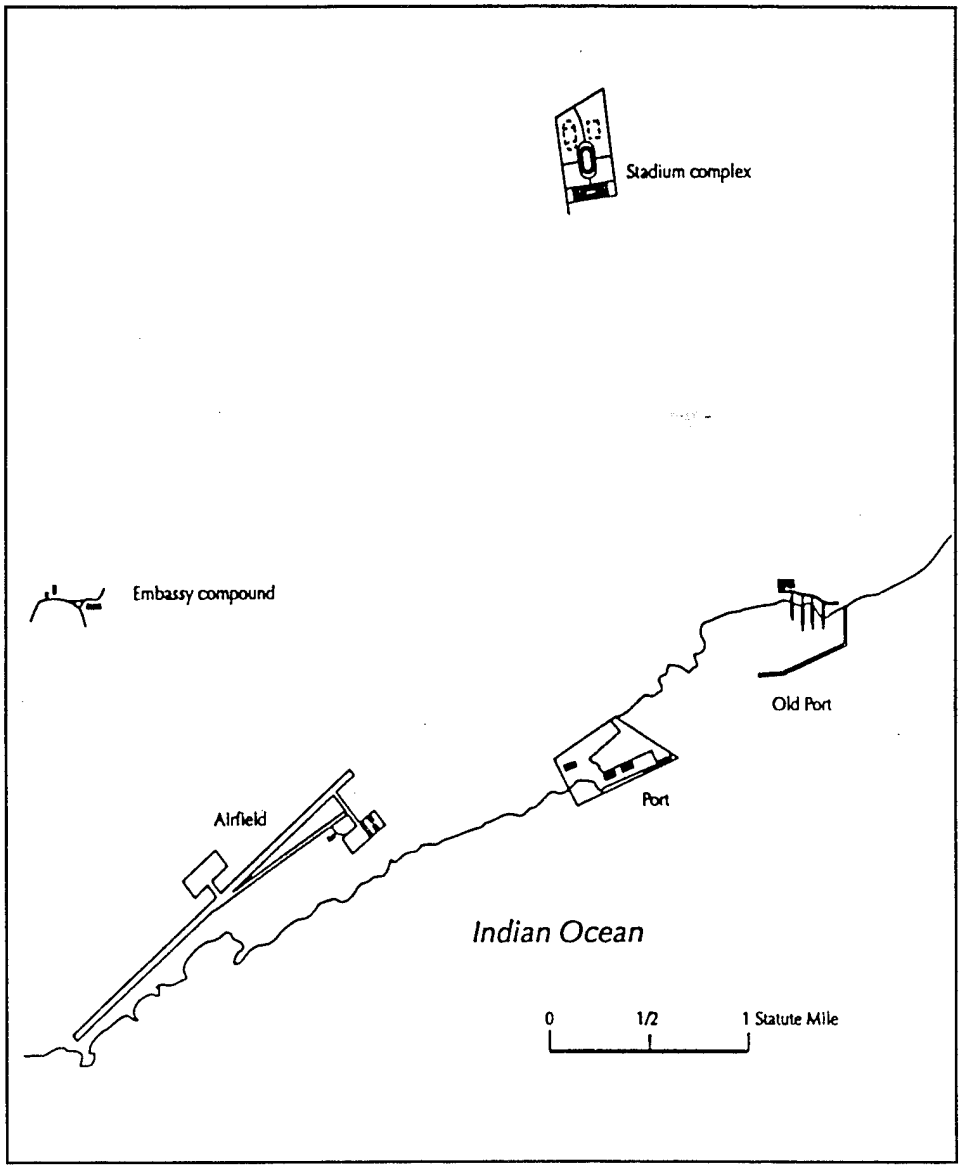

Figure 2. Map of Mogadishu [Ref. 8]

1. Operation Restore Hope Phase I: The MPF Offload Begins

Preparations for sealift operations continued uninterrupted despite the abysmal conditions at the Mogadishu port. One day after D-day, the CJTF arrived in Mogadishu and established his headquarters at the former U.S. Embassy grounds in the southern part of the city [Ref. 8:p. 40].

Also on 10 December, the divers from the U.S.S. *Tripoli* completed their initial harbor survey. They discovered that soundings adjacent to the piers were only thirty-five to thirty-seven feet at high tide and thirty-five feet at the harbor center. The divers also noted the two derelict tugs moored to the seaward pier. Alongside the same pier, the mast of a sunken tug protruded twenty feet above the water at high tide. Another navigation hazard, a cylindrical water heater, lay at the bottom near the seaward pier. Before completing their full survey three days later, it was already apparent that maneuvering the large, deep-draft MPSs and FSSs would be a risky endeavor. [Ref. 8:pp. 40-41]

Nevertheless, two tugboats chartered by MSC for such sealift operations, *Barbara* and *Bison Two* [Ref. 14], arrived from Mombasa in the afternoon of 10 December. The three MPF ships of MPSRON-2 arrived on station off Mogadishu soon afterward [Ref. 8:p. 41]. Furthermore, the prepositioned LASHs SS *Green Harbour* and SS *Green Valley* departed Diego Garcia. The ships were to deliver Army cargo including hospital supplies and combat rations to the forces in Mogadishu. [Ref. 10:p. 31]

Admiral Perkins, CMPF, arrived in the evening at the Mogadishu airport and immediately flew to MV *Lummus*. There he joined Colonel Newbold who reported the observations of the SLRP. The CMPF then decided to bring *Lummus* pierside in the morning. [Ref. 8:p. 41]

Adding to their concerns about inadequate infrastructure, the CJTF and CMPF were also already aware that many coalition forces were not self-sustaining. Contrary to expectations, it was clear that U.S. forces would have to provide considerable logistical support to some forces. The U.N. was in no position to offer such support. Under the prevailing conventions of combined operations, supplies had to be provided to coalition units upon request. U.S. forces could only deny requests for certain items, such as major weapon systems, and if fulfilling a request jeopardized U.S. readiness. [Ref. 9:pp. 20-21] That the limits of MARFOR logistical capability would be sorely tested in the initial weeks of the operation was quite apparent.

As ordered by the CJTF, MARFOR was to provide so-called "common-item, common-user support" to U.S. and coalition forces until relieved by Army logistics units

around D+32. This concept entailed providing bulk fuel, potable water, combat rations, and other commodities requested by units in the theater. The bulk of such supplies, of course, would initially come from the MPF. [Ref. 11:p. 43] MARFOR, therefore, was the logical candidate to be the common item, common-user provider as the sole entity with any substantial stocks in Somalia [Ref. 9:p. 25].

The First Force Service Support Group, Forward (1st FSSG (Forward)), the MARFOR combat logistical support element, would provide logistical support to military forces. The unit maintained the vast majority of MARFOR's logistics-related equipment. Although based in Mogadishu with the bulk of U.S. and coalition troops, [Ref. 9:p. 26] the unit expected to provide support to forces 350 miles away, far greater than the fifty mile range anticipated in Marine Corps doctrine [Ref. 11:p. 43]. Together with the OPPs, 1st FSSG (Forward) would conduct the MPF offload and thus establish the Mogadishu port as a supply hub for all of southern Somalia [Ref. 11:p. 40].

MV *Lummus* made an uneasy entrance into the Mogadishu port (Figure 3) on 11 December [Ref. 8:p. 41]. Despite high wind and seas, the ship moored at the seaward pier on a flood tide without incident [Ref. 13]. The other MPF ships remained at anchor outside the port because the pier could accommodate only one large ship at a time [Ref. 2:p. 48]. That same day, 1st FSSG (Forward) personnel landed in Mogadishu. They and the *Lummus* OPP began the MPF offload on 12 December [Ref. 8:p. 41].

Also on 12 December, the U.S. Army watercraft carrier MV *American Cormorant* departed Hythe, England for Mogadishu. The ship, ordinarily prepositioned with MPSRON-2, was a float-on/float-off (FLO/FLO) ship. As such, it could discharge or recover a variety of waterborne craft on her main deck by ballasting. The ship was in England to retrieve its cargo after undergoing shipyard overhaul in Hamburg, Germany. Its embarked craft including two floating cranes, two tugs, and several landing craft. [Ref. 10:pp. 31-32] Most importantly, the ship carried an Army Reverse Osmosis Purification Unit (ROWPU) barge. The barge contained two ROWPUs capable of producing 150,000 gallons of badly-needed potable water per day for forces in Somalia. MV *American Cormorant* was expected to arrive in Mogadishu sometime around 1 January 1993. [Ref. 9:p. 28]

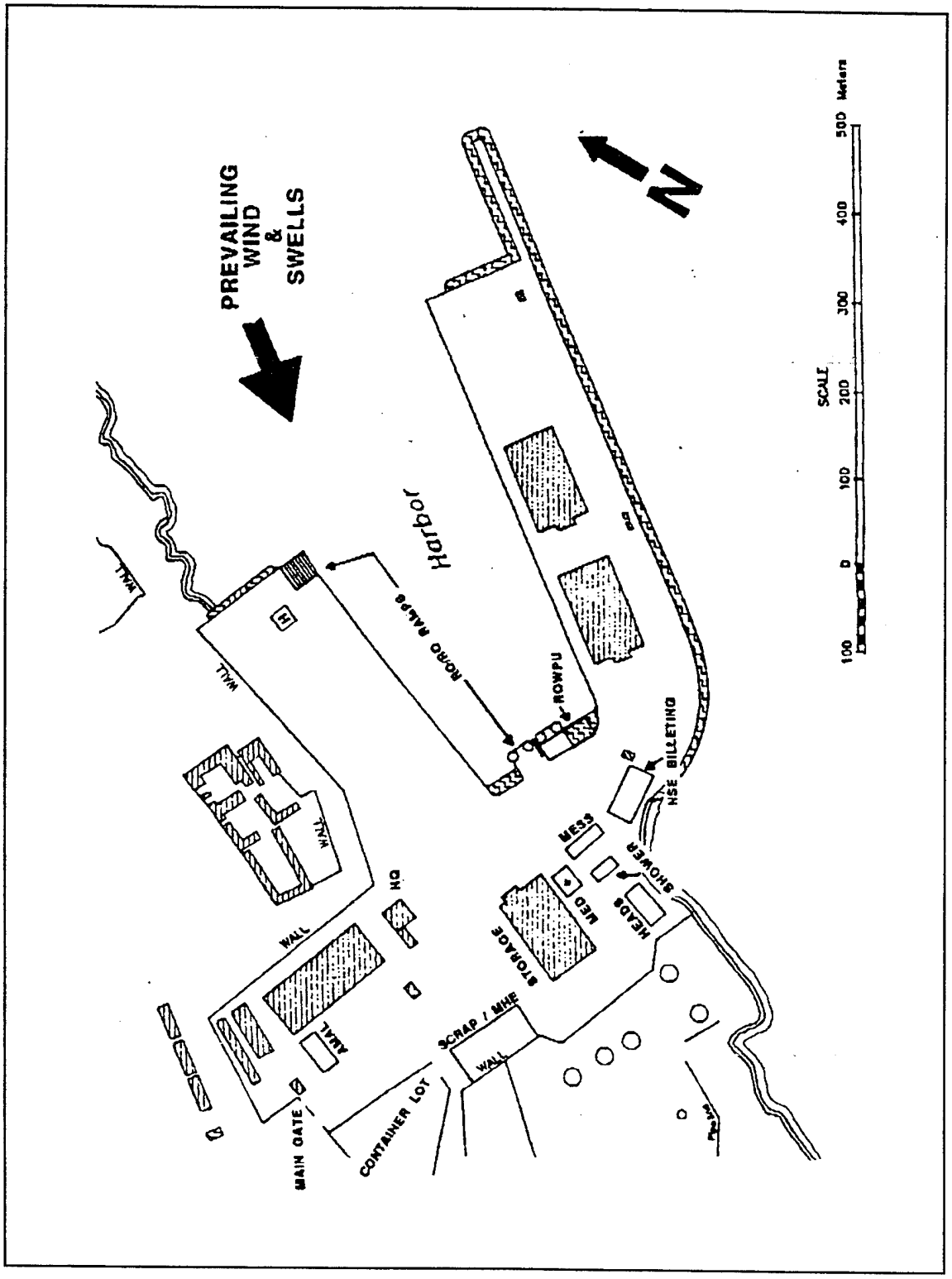

Figure 3. Mogadishu Port Facility [Ref. 12]

Meanwhile, as U.N. humanitarian relief ships began to arrive off Mogadishu, the CMPF took the first steps to create a port authority [Ref. 8:p. 12]. The first relief ship, *Sea Pearl*, arrived in port on 13 December in support of the World Food Program [Ref. 8:p. 43] Admiral Perkins established CMPF staff headquarters in a dilapidated two-story port administration building in the western part of the compound. [Ref. 15] The CMPF next directed the cleaning and disinfection of the port compound. Furthermore, the admiral acted to tighten perimeter security, ordering such measures as the placement of additional concertina wire. The CMPF also began to develop a prioritization policy for scheduling the pier rotation of ships. [Ref. 12] Preference, of course, would go to U.S. sealift and force sustainment shipping. [Ref. 17] Slowly, a structure for coordinating port operations began to evolve.

On 15 December, the prepositioned tanker SS *American Osprey* arrived off Mogadishu from Diego Garcia [Ref. 8:p. 44]. The ship was laden with nine million gallons of JP-5, the fuel consumed by almost all U.S. military vehicles. The ship also carried a significant quantity of regular, unleaded gasoline (MOGAS) required in lesser quantities by some coalition forces for certain vehicles. [Ref. 9:pp. 35-36] SS *American Osprey* transported an Offshore Petroleum Discharge System (OPDS). The system consisted of a large buoyant fuel tank (SALM) stowed amidships and a three-mile-long flexible pipeline on reels. The ship could discharge and anchor the SALM offshore, pump cargo fuel into it, and depart the scene. The SALM, once connected to a receiving station via the pipeline, could independently pump its contents ashore. [Ref. 14] SS *American Osprey* and a similar tanker, SS *Potomac*, would spend months on station and provide most of the theater's bulk fuel, but the OPDS was never used. [Ref. 13]

Lack of local experience combined with high winds and seas off Mogadishu precluded the potentially dangerous OPDS deployment [Refs. 13 and 17]. Instead, SS *American Osprey* used an Amphibious Assault Buoyant Fuel System (AABFS) provided by 1st FSSG [Ref. 9:p. 36]. This floating flexible conduit connected the ship with a fuel farm which 1st FSSG established on 15 December at Green Beach near the Mogadishu airport. [Ref. 11:p. 46] The ship positioned itself only a few thousand yards off Green Beach in a

four-point moor. By late December, Navy SeaBees connected the AABFS using powered lighterage from the MPF ships. [Ref. 14] When SS *American Osprey* began discharging soon afterward, the Green Beach facility became the central fuel distribution point in Somalia [Ref. 9:p. 36].

Also on 15 December, the MV *Lummus* completed its offload and prepared to get underway. MV *Anderson,* which moored at the opposite pier the previous day, awaited *Lummus*'s departure to complete offloading. However, high seas delayed MV *Lummus* for twenty-four hours, and *Anderson* did not shift berths until 16 December.

Because the AABFS was not yet aligned between SS *American Osprey* and Green Beach, MV *Anderson*'s offload was interrupted in order for the ship to discharge cargo fuel. The fuel was needed by SPMAGTF and Army units conducting operations in the South at Baledogle and Baidoa. [Ref. 8:p. 44] *Anderson*, like the other MPSs, carried approximately one million gallons of JP-5 and a small amount of MOGAS [Ref. 9:p. 35]. The ship pumped fuel directly to tanker trucks on the pier [Ref. 9:p. 27]. MPF ships would be occasionally tasked to provide bulk fuel by the JTF until *American Osprey* began discharging.

Moreover, MPF ships also became a critical source of potable water. The Army ROWPU barge was not yet in Somalia, and smaller field ROWPUs could not keep pace with demand. The evaporators aboard the MPF ships could distill seawater and store a sizeable surplus quantity of potable water. [Ref. 9:pp. 29-34] Once an MPF ship completed its offload, it cycled out to sea to accumulate water. MPF ships would moor adjacent to Green Beach and discharge the water to 1st FSSG water bladders ashore using an Amphibious Assault Bouyant Water System (AABWS). The system was essentially a bouyant hose similar to that of the AABFS. [Ref. 11:p. 41] In the following month, MPF ships each produced an average 50,000 gallons of potable per day water for the JTF [Ref. 9:p. 34].

MPF activity was already the focal point of logistics efforts in Somalia when Operation Restore Hope Phase I concluded ahead of schedule on 16 December [Ref. 18:p. 10]. MARFOR secured the Baledogle airfield during a heliborne assault on 13 December. Three days later, the SPMAGTF conducted another such assault on the Baidoa airfield. The

insertion phase of the expedition ended when marines secured the field at 0649 hours on 16 December. [Ref. 8:pp. 42-44] Meanwhile, the MPF offload continued largely as planned.

2. Operation Restore Hope Phase II: The MPF Offload Concludes

The establishment of Humanitarian Relief Sectors (HRSs), Phase II, began on 17 December as MV *Anderson*'s offload slowly progressed. Because many MARFOR units had not yet arrived in Mogadishu, vehicles and equipment delivered by MV *Lummus* accumulated at the port staging area. This temporarily delayed 1st FSSG stevedores in offloading *Anderson.* The ship nevertheless completed its offload on 19 December, early according to the JTF timeline. MV *Bonnyman* relieved *Anderson* as the third MPS to offload. [Ref. 11:p. 40] Table 2 summarizes the actual MPF offload timeline.

Ship name	Dates of offload[a]
MV 1st Lt. Jack Lummus	12-15 December
MV PFC James Anderson	14-19 December
MV 1st Lt. Alex Bonnyman	20-23 December
MV Pvt. Franklin J. Phillips	26-28 December

a. These are actual offload dates. Some ships arrived in port sooner, or stayed beyond their offload.

Table 2. MPF Offload Dates [Ref. 8]

SS *Green Valley* was also scheduled to go pierside to deliver its cargo about the same time as *MV Bonnyman*, but this plan met with considerable frustration [Ref. 11:p. 36]. The LASH arrived in the vicinity of Mogadishu with its sister ship SS *Green Harbour* on D+5. The ship was to offload a variety of Army supplies and equipment: material for a field hospital, MREs, tents, portable generators, ROWPUs, and material handling equipment (MHE). However, the ship's dimensions and Mogadishu weather conditions conspired to deny *Green Valley* an opportunity to discharge cargo at Mogadishu. [Ref. 10:p. 31]

The CMPF and COMPSRON TWO had no choice but to offload the LASHs elsewhere. First, persistent high seas and the ships' deep draft precluded efforts to moor them pierside. Second, the option to discharge the ships' barges offshore, or "in stream," was also too hazardous. The port offered too little space and shelter to conduct such an evolution. In-stream operations would be particularly difficult because, in order to access desired containers, large numbers of ammunition barges would have to be discharged. [Ref. 10:pp. 31-32] Consequently, SS *Green Valley* was dispatched on 19 December to Mombasa. There the ship would cross-deck its Army cargo to MV *Lummus* [Ref. 8:p. 45].

Meanwhile, in the U.S., the deployment of Army Forces (ARFOR) was proceeding rapidly. By 20 December, MTMC had shipped approximately 30,000 tons of military cargo to CONUS seaports, ninety-five percent of which went to Bayonne, Norfolk/Newport News, Savannah, and Beaumont. [Ref. 10:p. 19] Furthermore, MSC had assigned eight ships for the sealift of the Army cargo. These included two RO/ROs already on charter to the MSC, MV *American Eagle* and MV *American Falcon.* The remaining six were FSSs: USNS *Pollux*, USNS *Altair*, USNS *Algol*, USNS *Capella,* USNS *Bellatrix*, and USNS *Denebola.* The FSSs had been activated by order of TRANSCOM from a reduced operating status with four days notice. [Ref. 10:pp. 35] Seven of the sealift ships departed CONUS for Mogadishu during the last two weeks of December [Ref. 12].

Back in Mogadishu, the CMPF continued efforts to develop port infrastructure. More humanitarian relief ships were converging on Mogadishu, and the port still lacked charted anchorages or a shipping control authority. Rear Admiral Perkins therefore tasked COMPSRON TWO to establish a port control service.

The MPSRON-2 commodore, Captain Allee, subsequently directed his operations officer to designate anchorages and devise a "Mogadishu Port Control" watch bill. From MV *Anderson*'s bridge, MPSRON-2 staff members assigned anchorages and advised coalition ships using VHF radio communication. With the arrival of tugboats *Fast Fox* and *Smit-Lloyd 111* by late December, "Mogadishu Port Control" also directed a total of four MSC-chartered tugs. Port control officers additionally coordinated passenger and supply transfers between ships at anchor, a service safely provided by the large, seagoing *Smit-Lloyd*

111. Despite some improvisation and limited training, "Mogadishu Port Control" personnel became in time a reasonably efficient port management service. [Ref. 14]

Having addressed the issue of shipping control, the CMPF confronted problems relating to the pierside support for U.N. relief ships. Specifically, the port lacked a dedicated stevedore force which could help offload grain sacks and other humanitarian supplies from ships moored at the seaward pier. Consequently, the CMPF cooperated with U.N. relief organizations to hire a large native work crew in late December. Supervised closely by MARFOR security personnel, the native stevedores transferred grain sacks from the ships and the pier to nearby warehouses or relief truck convoys. [Refs. 12 and 14] The pierside rotation of relief ships could thus proceed more quickly.

Port development efforts were already well in hand when the first Army units arrived in Somalia. On 21 December, an advanced party of the 4th Transportation Battalion of the 7th Transportation Group (7th TRANS) landed in Mogadishu to consult with the CMPF staff. This was the first step in transferring responsibility for port operations to the U.S. Army. [Ref. 8:p. 47] With port services and infrastructure rapidly improving, CMPF anticipated a smooth turnover.

Yet, affairs to the south proved disappointing for the JTF and CMPF. SS *Green Valley* tried to enter Mombasa harbor on 21 December, but Kenyan authorities denied the ship access. The officials insisted that Mombasa could not accommodate a ship of such length. They furthermore forbade the in-stream discharge of ammunition barges in the channel or harbor. [Ref. 10:p. 32] Consequently, the transfer of cargo to *Lummus* never occurred, and an exasperated JTF decided instead to airlift field hospital material to Mogadishu on C-141s [Ref. 8:p. 45]. The LASH fiasco thus continued for several weeks.

The pace of port operations at Mogadishu was meanwhile increasing. On 22 December, MV *Scheldemond* arrived at the Mogadishu anchorage with high-priority cargo for the JTF. The MSC-chartered ship carried 62,000 MREs and AM-2 matting drawn from prepositioned stocks in Thumrait, Oman. [Ref. 9:p. 28] The matting was urgently needed to reconstruct airstrips in Southern Somalia controlled by U.S. forces. MV *Scheldemond* offloaded its cargo on 24 December. [Ref. 8:p. 47]

The first coalition warship, *San Marco*, also arrived from Italy on 24 December. By mid January, twenty-five coalition ships would offload 22,300 metric tons of military equipment and supplies including 1,987 vehicles, 819 containers, and 50 helicopters. [Ref. 8:p. 48]

Furthermore, on 25 December, MV *American Eagle* arrived at Mogadishu from Rota, Spain. This was the first ship assigned for Army sealift to arrive. The ship was diverted in late November by MSC for sealift duty, tasked to offload SeaBee cargo in Somalia, and ordered to Bayonne to load Tenth Mountain Division cargo. Six more sealift ships carrying Army cargo, five of them FSSs, were en route from CONUS. [Ref. 12]

As overall port activity increased, however, the MPF offload was drawing to a close. MV *Phillips* began offloading on 26 December. During the three-day evolution, the CJTF decided that offloading a fifth MPSRON, MV *Hauge*, would be unnecessary. The ship, having completed its maintenance cycle, was en route from Blount Island Command at Jacksonville, Florida. MARFOR planners at first believed that the vehicles aboard *Hauge* would be necessary to support extensive logistics operations. They observed, however, that vehicles offloaded from *Phillips* were not being issued. Moreover, the first FSS carrying Army vehicles and equipment was scheduled to soon arrive. The CJTF therefore ordered MV *Hauge* to remain on station off Mogadishu, its cargo intact in case of unforseen MAGTF requirements. Consequently, when MV *Phillips* finished offloading on 28 December, the MPF offload concluded. [Ref. 8:pp. 48-49]

The date 28 December also marked the end of Operation Restore Hope Phase II. Eight days earlier, MARFOR and Belgian forces conducted a successful amphibious landing at the port of Kismayo. MARFOR also seized the Bardera Humanitarian Relief Sector (HRS) on 23 December and assisted French troops secure the Oddure relief sector on Christmas. Italian forces occupied the Gialassi HRS on 27 December, and the final objective, Belet Uen, was secured by ARFOR and Canadian forces the next day. [Ref. 8:pp. 46-50] With little native opposition, the JTF was able to secure the relief sectors two months ahead of schedule [Ref. 18:p. 10].

Phase II ended as Mogadishu port began to reach basic standards expected of a modern facility. The port was fully operational, and pierside rotation of ships was robust. Given the completion of the MPF offload, the CJTF and CMPF could now consider plans for backloading and for transferring control of logistics.

3. Operation Restore Hope Phase III: Port Control Transition and MPF Backload Commencement

On 29 December, the 1st FSSG (Forward) staff submitted its MPF backload plan to General Johnston. They intended to backload the least useful equipment and supplies first and the most useful material last. In view of Phase II's early completion, 1st FSSG proposed to start on 15 January and finish by 28 February 1993. [Ref. 52]

The JTF headquarters staff meanwhile met with five U.N. representatives to discuss the eventual transfer of operational control to UNOSOM II. The staff had been planning Phase III objectives since Christmas and subsequently developed a strategy for gradual turnover of responsibilities. The JTF presented these plans to the U.N. party and thereby took the initial step toward a U.S. drawdown. [Ref. 8:p. 50]

The following day, 31 December, a familiar problem resurfaced. MV *American Cormorant* arrived off Mogadishu and unsuccessfully attempted to discharge its watercraft, including the valuable ROWPU barge. High seas were again the culprit. As a result, forces ashore continued to rely heavily on MPF ships for water while waiting to receive the ROWPU barge.

SS *Green Harbour* was dispatched a day later to the port of Kismayo where the sea state was thought to be more favorable. There too, however, in-stream operations were made impossible by high winds and swells. Both SS *Green Harbour* and SS *Green Valley* were consequently ordered back to Diego Garcia. [Ref. 10:p. 32]

Nevertheless, local weather conditions did not hamper the offload of Fast Sealift Ships. The first FSS, USNS *Pollux*, arrived at Mogadishu on 1 January 1993 [Ref. 11:p. 42]. Despite concerns about the ship's draft and the sea state, *Pollux* moored without incident to the seaward pier [Ref. 14].

The FSS offload proceeded despite some obstacles. There was only one berth at Mogadishu to accommodate an FSS. Furthermore, USNS *Capella* experienced a serious engineering failure in the Mediterranean while en route. [Ref. 10:p. 37] By mid-January, however, four FSSs had offloaded 23,500 metric tons of ARFOR cargo: 2,648 vehicles, 261 containers, and 46 helicopters [Ref. 8:p. 52]. The deployment timeline for FSSs and other Army sealift ships is shown in Table 3.

Ship	Arrival at Mogadishu	Cargo Volume (ft^2)	Cargo Type
Pollux	January 01	151,310	10th MTN DIV
American Falcon	January 02	94,710	12th AVN BDE
Altair	January 04	150,565	10th MTN DIV
Bellatrix	January 08	170,018	CS/CSS
Algol	January 12	168,989	CS/CSS
Capella	January 20	159,786	7th Trans Group
Total delivered to 1/20/93		895,378	
Denebola		146,000 (est.)	CS/CSS
American Eagle		37,630	CS/CSS
En route on 1/20/93		183,630	
Total Army Unit Equipment		1,079,008	

Table 3. Sealift of Army Unit Equipment [Ref. 10]

As the third FSS, USNS *Bellatrix*, arrived at Mogadishu, MV *American Cormorant* gained clearance to enter Mombasa Harbor on 8 January and began its lighterage offload. The ship discharged two utility craft, LCU-2000s, which began making supply deliveries to Kismayo and Mogadishu by mid-month. [Ref. 10:pp. 32-33]

By the following week, the ship also discharged the now infamous ROWPU barge and two tugs [Ref. 9:p. 28] The tugs attempted to tow the barge north to Mogadishu, but high seas stopped them near Kismayo. To salvage the effort, the sea-going tug *Smit-Lloyd*

111 was dispatched from Mogadishu to Kismayo. There the tug was to retrieve the ROWPU barge. [Refs. 14 and 17]

In Mogadishu, redeployment planning continued. Also on 8 January, the JTF headquarters staff unveiled a plan for the drawdown of forces in Somalia. The plan was submitted to the CINCCENT three days later. General Hoar approved the general concept on the following week, but he rejected a specific timeline. The CINCCENT insisted that the drawdown should be driven by events and that only 3d Battalion of the 9th Marines (3d Bn/9th Marines) could at first redeploy. [Ref. 8:p. 55]

Logistics commanders meanwhile planned the transfer of common-user, common-item support responsibilities from MARFOR to ARFOR control. On 9 January, the commanding officers of 1st FSSG (Forward) and Joint Task Force Support Command (JTFSC) met to discuss the transition. [Ref. 8:p. 54] Established shortly after D-day and staffed predominantly by Army personnel, the JTFSC was the JTF's functional component for logistics. The JTFSC was modeled after the 22nd Support Command which provided theater logistical support during the Gulf War. The command would centralize the management of logistics operations throughout Southern Somalia. [Ref. 8:p. 13] The JTFSC commander agreed to relieve 1st FSSG on 28 January provided the command's equipment arrived in Somalia as scheduled [Ref. 8:p. 54].

Deliberations about the MPF backload also took center stage. On 11 January, Marine Forces Pacific (MARFORPAC) sponsored a three-day backload planning conference at Blount Island Command. Planners hoped to maximize recovery of each MPSRON's original cargo in Somalia in order to save labor during the ships' eventual reconstitution at Blount Island. They also hoped to avoid trouble from the Department of Agriculture which would inspect MPF ships upon their return to CONUS. Conference attendees thus emphasized the need for a vehicle equipment washdown site at the Mogadishu port. [Ref. 8:p. 53] Preventing future difficulties was a central conference theme.

Yet, at Diego Garcia, the LASH offload dilemma continued to defy plans. SS *Green Valley* and SS *Green Harbour* dropped anchor in the atoll's lagoon on 11 and 12 January respectively. There, in placid waters, the ships were to discharge ammunition barges and ballast until light enough to enter Mogadishu harbor. The plan changed, however. Instead,

the ships were ordered to cross-deck MRE vans to a commercial container ship bound for Mogadishu. [Ref. 10:p. 32] During the cargo transfer, one ship's container crane failed which prolonged the evolution and JTF frustration. [Ref. 14]

Meanwhile, as backload plans were being finalized, Admiral Perkins was preparing to depart Mogadishu. As the CMPF, he had directed Mogadishu port's remarkable transformation from a devastated district to a fully operational harbor. In only thirty-five days, the CMPF recorded the following port accomplishments:

1. The movement of 114 ships and the off load of forty-eight,
2. The offload of 96 helicopters and 6,668 other military vehicles,
3. The offload of 37,500 metric tons of grain from 14 relief ships,
4. The delivery of a total 113,950 metric tons of cargo (3,250 tons per day),
5. The discharge of 5,220,000 gallons of fuel ashore. [Ref. 12]

Furthermore, port security had been significantly improved during this period. Warehouse pilferage had virtually ceased by 14 January [Ref. 8:p. 26].

When Admiral Perkins redeployed to CONUS on 15 January, COMPSRON TWO assumed responsibilities for the MPF backload and for coordinating MSC shipping in the theater. Responsibility for port control passed to the 7th TRANS commanding officer, Colonel Leyben. [Ref. 8:p. 57] The interrelationship of MPSRON-2 and 7th TRANS functions demanded close cooperation between the commands.

To better supervise MSC shipping and to facilitate interaction with 7th TRANS personnel, Captain Allee established the Military Sealift Command Office, Mogadishu (MSCO) in the port administration building. MSCO was the successor to the old "Mogadishu Port Control" and was staffed by the same MPSRON-2 personnel. The office staff occupied a vacated CMPF space located adjacent to the 7th TRANS offices. Commander Rose, USNR, the new harbor pilot, became the MSCO officer-in-charge answerable to COMPSRON TWO. Using VHF radio and satellite telephone communication, MSCO maintained close contact with ships involved in the operation and the MSC chain of command. The office also controlled tug operations although theoretically

a 7th TRANS function. In practice, MSCO and 7th TRANS shared port control responsibilities. [Ref. 14]

The order to begin backloading MPF equipment arrived on 15 January as COMPSRON TWO and 7th TRANS assumed responsibilities for port operations. Formal orders from the CINCCENT to redeploy Marine personnel would not be issued for another week; however, the 3d Bn/9th Marines prepared for their imminent departure from Somalia. On 16 January, the battalion began returning to Mogadishu as Australian forces gradually relieved them in Baidoa. The Australians began arriving in the Baidoa sector five days earlier and, on 18 January, assumed control from MARFOR. The first element of 3d Bn/9th Marines left Somalia on 19 January. [Ref. 8:p. 55] Battalion equipment was meanwhile being staged at the Mogadishu port for backloading.

Also on 19 January, the MPF backload began as MV *Phillips* moored to the Mogadishu harborside pier [Ref. 8:pp. 53-54]. Table 4 summarizes the actual backload timeline.

Ship	Scheduled sail date	Actual date entered port	Actual date left port
Phillips	22 Jan	19 Jan	23 Jan
Anderson	30 Jan	23 Jan	29 Jan
		2 Feb	6 Feb
Bonnyman	13 Feb	29 Jan	1 Feb
		12 Feb	15 Feb
		23 Feb	24 Feb
		23 Apr	25 Apr
Lummus	28 Feb	15 Feb	18 Feb
		24 Feb	26 Feb
		25 Apr	30 Apr

Table 4. MPF Backload Dates [Ref. 8]

Two days before the backload's commencement, 1st FSSG (Forward) established a fresh water washdown site in response to concerns expressed at the Blount Island backload conference [Ref. 8:p. 53]. Redeploying units were required to pass their vehicles and equipment through the site. A MARFOR Embarkation Control Group (ECG) was then to inspect the vehicles and equipment to ensure a proper washdown before permitting their backload. [Ref. 11:p. 98] Located at the Mogadishu port, the site was made available to all JTF units [Ref. 8:p. 53]. The washdown process was part of a backload procedure evolving with the transition from MARFOR to JTFSC control.

That transition was in its final days when the CJTF received the official redeployment order from CINCCENT on 22 January. As the Somalia operation entered the redeployment period, events were proving very favorable. Two days prior to the receipt of CINCCENT orders, MTMC reached a cargo shipment benchmark of 43,000 tons to CONUS ports [Ref. 10:p. 19]. On 24 January, the MRE containers cross-decked from the LASH ships in Diego Garcia were finally unloaded at Mogadishu port [Ref. 10:p. 32]. Furthermore, 3d Bn/9th Marines completed their redeployment on 26 January [Ref. 8:p. 55]. The JTFSC thus prepared to inherit desirable circumstances.

C. REDEPLOYMENT AND SUSTAINMENT: JTFSC LOGISTICAL SUPPORT PERIOD (28 JANUARY - 3 MAY)

On 28 January, the JTFSC assumed responsibility for most logistical operations in Somalia [Ref. 8:p. 58]. The command's specific mission as defined by CENTCOM was as follows:

> ... to provide logistics and medical support for U.S. forces and, as directed, to coalition forces deployed in support of Operation Restore Hope. Provide common-item support/interservice support, inland distribution of POL (fuel), and dry cargo, and common-user port operations. ...In conjunction with CJTF, Somalia and UNOSOM II coordinate for the transfer of JTFSC functions and responsibilities to UNOSOM and/or contracted service support agencies. On order [of] CJTF, Somalia, redeploy units and equipment. [Ref. 11:p. 52]

More simply put, the JTFSC was to (1) redeploy U.S. forces, (2) sustain forces remaining in the theater, and (3) transfer control of operations to UNOSOM II.

Some logistical functions, however, did not immediately transfer to JTFSC including strategic airlift, airfield operations, and food service. Furthermore, the JTF staff, MARFOR, and 1st FSSG (Forward) continued to share functions related to the control of unit redeployment movements. Ultimate JTFSC consolidation of movement control, of course, remained contingent upon developing a procedure for personnel redeployment and backloading of equipment. [Ref. 8:p. 58] The transitory state lasted through the early stages of the redeployment [Ref. 11:p. 97].

Also on 28 January, the CINCCENT granted CJTF permission to implement the redeployment timeline. This was the original drawdown timeline submitted by the JTF staff on 11 January. Although the timeline was still event-driven, security conditions were so much improved that forces could begin withdrawing according to the JTF schedule. [Ref. 8:pp. 58-59]

The MPF backload, meanwhile, proceeded unhindered by the organizational changes at JTF headquarters. The first part of MV *Anderson*'s backload neared completion, and an interim redeployment protocol was already devised. The steps used by the JTF staff and MARFOR to redeploy units follow.

1. The JTF staff requested permission from the CINCCENT to redeploy a specific U.S. unit.

2. After receiving CINCCENT approval, the JTF directed the appropriate component commander to move the unit and its equipment to staging areas in Mogadishu.

3. Component commanders were to contact the JTF Movement Control Center (MCC) to schedule common-user transportation for moving the unit to Mogadishu.

4. Component commanders submitted unit lift requirements data to the JTF.

5. After consolidating and validating unit lift data, the JTF submitted inputs to TRANSCOM via CENTCOM.

6. TRANSCOM designated sealift and airlift assets for unit redeployment through MSC and AMC. The command notified the JTF and MARFOR ECG of the assignments.
7. The ECG called the redeploying unit from the staging area to begin washdown and embarkation.

Because the JTF MCC had recently arrived in Somalia, it was not immediately prepared to provide common-user transportation. Consequently, component commanders contacted MARFOR for the service during the early days of the redeployment [Ref. 11:pp. 97-99]. Aided by an accurate TPFDD, the redeployment/backload process proceeded more smoothly than deployment operations [Ref. 17]

Much improved too was the JTFSC's force sustainment capability with the long-awaited arrival of the Army ROWPU barge from Kismayo. The barge's two ROWPUs became operational on 28 January [Ref. 9:p. 28], not long after *Smit-Lloyd 111* delivered the barge to Mogadishu. Theater bulk water production capability radically improved. Output from the barge and six Army 3,000 gallons-per-hour (GPH) ROWPUs increased water purification five-fold. Since D-day, water production barely out paced consumption, but the JTFSC could now plan on building a sizeable potable water surplus. [Ref. 9:pp. 31-44]

Yet, the JTFSC remained concerned about ensuring an adequate inventory of troop rations and other consumable items in the theater. A stable inventory depended on a predictable sustainment shipping schedule in a region lacking regular liner service.

MSC therefore assigned two ships for the sustainment of forces in Somalia: SS *Gopher State* and MV *Strong Virginian.* MSC originally activated SS *Gopher State* from the Ready Reserve Force to replace the crane ship *Corpus Christi.* The latter ship was placed in an off-hire status when, due to crane failure, it could not load sustainment cargo at Bayonne. [Ref. 10:pp. 37-38] MV *Strong Virginian,* a long-term charter prepositioned ship, carried an Army field hospital and was normally assigned to MPSRON-2. Nevertheless, MSC recognized that the ships' 500-container capacity made them well suited for point-to-point service to Mogadishu. [Ref. 19:pp. 15-16]

The ships were to provide a connection to the regular MSC liner service to the Mediterranean -- in essence, a shuttle service. Containers leased by the Department of

Defense (DoD) would be stuffed with sustainment cargo at Defense Logistics Agency (DLA) depots and moved to CONUS seaports. The containers would be loaded onto MSC-chartered commercial liners operated by the Lykes Brothers Steamship Company or Farrell Lines Incorporated. The liners were to offload the containers in Alexandria, Egypt where a four-man MTMC detachment established a transshipment site. [Ref. 10:p. 38] When sufficient stock accumulated at the transshipment site, either SS *Gopher State* or MV *Strong Virginian* would be dispatched to retrieve the containers and deliver them to Mogadishu. Both ships would remain attached to the JTF and ensure sustainment shipments kept pace with force demand for sustainment supplies. [Ref. 17]

The first sustainment ship, SS *Gopher State,* arrived in Mogadishu directly from CONUS on 30 January. After two months, the shuttle ships would together transship nearly 1,150 twenty-foot containers between Alexandria and Mogadishu. Ninety-four percent of the vans would originate from CONUS, the remainder from Europe, and most contained MREs. [Ref. 10:p. 38] Sustainment shipments were to more than satisfy JTFSC requirements.

The CJTF might well have been thinking of Mogadishu port operations when he declared Operation Restore Hope's "stabilization" phase at an end on 4 February. A system for force sustainment was well established and the water shortage overcome. A redeployment timeline was being implemented, and the MPF offload was proceeding close to schedule. Moreover, three days before Phase III's end, the 1st Combat Engineer Battalion and bulk fuel personnel redeployed. The ATU, with its SPMAGTF embarked, departed the theater forty-eight hours later. [Ref. 8:p. 59] Although port efficiency was perhaps now at its zenith, port activity was starting to ebb.

JTF activity in general subsided to such a degree in mid-February that sustainment stocks began to accumulate in the theater. By the time MV *Maersk Constellation* arrived in Mogadishu, the JTF no longer had real need for its cargo. Assigned by MSC in December to transport MARFOR supplies, the ship made the long voyage from Port Hueneme, California, reaching its destination on 15 February. Much of MARFOR was already redeployed by that date, and *Maersk Constellation* thus retained most of its supplies. [Ref.

9:pp. 49-50] The ship departed on 23 February for CONUS [Ref. 12] having only offloaded some lumber coincidentally useful to ARFOR [Ref. 9:p. 50]. As demonstrated by the *Maersk Constellation* episode, the JTFSC's principal sustainment-related concern was now surplus control.

Of greater concern to the JTF, however, was growing civil unrest in Mogadishu and its implications for port security. On 23 February, U.S. and coalition forces became engaged in six skirmishes with armed Somalis [Ref. 8:p. 61] In the late afternoon, the port came under small arms and grenade attack. MV *Bonnyman*, moored to the harborside pier for its backload, was the ship closest to the origin of fire, but it escaped damage. [Ref. 14] Although hostilities subsided after only a few days, port security could no longer be taken lightly.

Despite the violence in Mogadishu, the force redeployment continued. On 28 February, 1st FSSG (Forward) withdrew from Somalia, and the Brigade Service Support Group Seven (BSSG-7) assumed responsibility for MARFOR combat service support functions. BSSG-7 therefore gained control of the MPF backload embarkation process. [Ref. 8:p. 61]

By early March, even the COMPSRON TWO prepared to withdraw. The backload of MV *Phillips* and MV *Anderson* was complete. The former ship had returned to Blount Island for cargo reconstitution, and the latter was en route. MV *Bonnyman* and MV *Lummus* were not yet fully backloaded, but their remaining equipment was not due to return from the field for several weeks. MV *Hauge*, in the meantime, remained fully constituted and without tasking. Furthermore, the JTFSC no longer required the MPF to provide bulk water and fuel. Several functional Army ROWPUs and the SS *American Osprey* could easily meet force sustainment requirements. Captain Allee therefore saw little reason to remain in Somalia.

COMPSRON TWO and his staff, embarked on MV *Lummus*, departed Mogadishu for Diego Garcia on 5 March. Commander Rose then assumed command of MSCO, Mogadishu and thereby took oversight responsibility for local MSC shipping operations. A small Navy Reserve staff replaced the office's original MPSRON-2 personnel. MSCO's operational chain of command now descended from MSC Headquarters in Washington, D.C.

to MSC, Europe in London and then to MSC, Southwest Asia (SWA) in Bahrain. The MPSRON-2 staff, however, continued to provide administrative support to SS *American Osprey* and other squadron ships at Mogadishu. [Ref. 14]

Also during early March, the backload of Army equipment began to build momentum. Two FSSs departed Mogadishu for CONUS with backloaded ARFOR equipment and vehicles embarked. On 6 March, USNS *Denebola* left for Bayonne, and USNS *Capella* departed for Charleston on 17 March. The ARFOR backload, however, would take several more months to finish. [Ref. 12]

The MPF backload, however, neared completion by late April. MV *Bonnyman* and MV *Lummus* returned to the Mogadishu port on 23 and 25 April respectively to complete backloading. On 30 April, the first MPF ship to enter the port, MV *Lummus*, also gained the distinction as the last MPSRON to depart. The MPF upon which Operation Restore Hope so heavily depended was now redeployed. [Ref. 8:p. 54]

By early May, the CJTF prepared to close Phase IV of Operation Restore Hope, the transition back to U.N. control. Although UNOSOM II would assume control of coalition forces in Somalia, responsibility for theater logistics would remain American. Redeployment and force sustainment shipping would still call on Mogadishu well into the following year.

D. REDEPLOYMENT AND SUSTAINMENT OPERATIONS DURING UNOSOM II (4 MAY 1993 - 31 MARCH 1994)

Lieutenant General Bir assumed command of UNOSOM II forces on 4 May at 1400 hours local time. Major General Montgomery, Bir's deputy, assumed command of the 5,000 U.S. troops remaining in Somalia as part of the U.N.'s continuing mission. Logistics personnel comprised the majority of the U.S. contingent. The Quick Reaction Force (QRF), a mix of 1st Brigade and Tenth Mountain Division soldiers, as well as intelligence personnel comprised the remainder of the contingent. [Ref. 8:pp. 64-65] CENTCOM retained operational control of U.S. ships in the theater [Ref. 2:p. 59].

Throughout May and June, redeployment and sustainment shipping operations proceeded at a more leisurely pace. The bulk of U.S. equipment was en route or already back

in CONUS. Also, substantial inventories of sustainment supplies remained in the theater. [Ref. 12 and 17] Fewer ships were required at this point in the operation.

From June through most of September, the regional monsoon precluded normal port operations. Because of higher than usual wind and seas, only a few ships were moved in the Mogadishu port. [Ref. 17]

With the monsoon came rising native unrest in Mogadishu. The ambush of 5 June which left twenty-four Pakistani soldiers dead was the first major clash between occupation forces and Somali clansmen. [Ref. 2:p. 20] Yet, port logistical operations were generally unaffected by hostilities until autumn when the *American Osprey* was damaged by hostile fire.

The tanker had been discharging petroleum at Mogadishu since December of 1992 with only brief intermissions to receive bunkers and more cargo fuel. [Ref. 14] Although usually positioned off Green Beach, the ship was moved into the harbor to pump fuel pierside. This movement placed the tanker much closer to the scene of previous hostilities -- and in range of Somali rocket-propelled grenade fire. One or two rockets struck the ship causing minor damage to deck gear and puncturing two small cargo fuel tanks.

No crewmen were injured, and because the damaged tanks were virtually empty, no fires started. [Ref. 14] Nevertheless, the incident prompted immediate measures to improve port security. [Ref. 17] SS *Potomac,* which relieved *American Osprey* not too long after the incident, was fortunately spared a similar experience.

Even as *Potomac* continued to build the theater fuel reserve, UNOSOM II was drawing to a humiliating close. The violent exchange between the QRF and Somali militants on 3 and 4 October compelled President Clinton to re-evaluate U.S. involvement in Somalia. The incident, the bloodiest of any during a U.N. peace-keeping operation, left eighteen Americans and hundreds of Somalis dead. [Ref. 2:p. 20] The President soon ordered the gradual withdrawal of U.S. forces from the theater, and the seaborne redeployment schedule accelerated.

Ten ships, including four FSSs, backloaded the remaining U.S. equipment and vehicles at Mogadishu between early September and late March [Ref. 12]. The last ship

departed for CONUS on 25 March 1994 [Ref. 17], six days before the official end of U.S. military operations in Somalia [Ref. 2:p. 20].

The diplomatic and tactical issues related to the mission's unhappy conclusion often overshadow other important aspects of the operation. As the chronology of Mogadishu port erations suggests, however, there are equally interesting issues regarding seaborne logistics to ponder. The major events relating to sealift operations are shown in Table 5. The centrality of maritime operations during the mission warrants closer study of these issues.

21 NOV 92	IMEF and CENTCOM staff begin joint planning.
04 DEC	President orders U.S. forces into Somalia.
05 DEC	MPF departs Diego Garcia for Mogadishu.
09 DEC	D-day; SPMAGTF seizes Mogadishu facilities.
11 DEC	*Lummus* moors at Mogadishu; MPF offload begins.
15 DEC	*American Osprey* arrives off Green Beach.
16 DEC	Phase I ends.
25 DEC	*American Eagle*, first Army sealift ship, arrives at Mogadishu.
28 DEC	MPF offload concludes. Phase II ends.
29 DEC	1st FSSG submits backload plan to CJTF.
01 JAN 93	*Pollux*, first FSS, arrives at Mogadishu.
08 JAN	*American Cormorant* arrives at Mombasa.
11 JAN	MARFORPAC backload conference convenes.
15 JAN	Adm. Perkins departs Mogadishu. CJTF receives backload order.
19 JAN	MPF backload begins. 3d Bn/9th Marines begin redeployment.

Table 5. Important Events at the Mogadishu Port

22 JAN	CJTF receives formal CINCCENT redeployment order.
28 JAN	JTFSC logistical support period begins. ROWPU barge becomes operational at Mogadishu.
04 FEB	Phase III ends.
05 MAR	COMPSRON TWO departs Mogadishu.
30 APR	*Lummus* departs Mogadishu; MPF backload concludes.
04 MAY	UNOSOM II begins.
03 OCT	QRF engages Somali militants.
25 MAR 94	Last U.S. ship departs Mogadishu; seaborne redeployment concludes.
31 MAR	U.S. military involvement in Somalia ends.

Table 5 (Continued)

III. ANALYSIS OF ISSUES SURROUNDING THE CONDUCT OF MOGADISHU PORT LOGISTICAL OPERATIONS

The consensus about the effectiveness of sealift and sustainment operations at Mogadishu is (1) they were generally successful, and (2) U.S. forces were fairly well-prepared to conduct them. As in all military operations of this scale, however, some significant problems did arise. This chapter, therefore, explores the major challenges confronted by participating MSC decision-makers. Analysis covers the following topics:

1. Plans and preparation,
2. Port control,
3. Sealift,
4. Sustainment,
5. Chartering of ships,
6. Liaisons with government authorities,
7. Port security.

Through such analysis, a more detailed assessment of operational effectiveness can be made.

A. PLANS AND PREPARATION

The quality of any plan reflects the quantity and accuracy of pertinent data afforded the planner. Thus, crisis action plans for the deployment of forces to unfamiliar Somalia were destined to have serious limitations. Two reasons apply: (1) the relatively short-fused tasking of CENTCOM and JTF planners, and (2) the lack of U.S. military experience in East Africa. These handicaps translated into a poorly-developed TPFDD base and scant intelligence on conditions at the Mogadishu port. That deployment plans would be frustrated by unforseen circumstances and requirements was therefore inevitable despite the planners' utmost professionalism.

1. Time Phased Force Deployment Data (TPFDD) Base

Because a TPFDD specific to Somalia did not exist prior to Operation Restore Hope, JTF planners adapted the Gulf War TPFDD for the operation. OPLANS and TPFDD are not usually prepared in advance for minor regional contingencies such as the Somalia crisis. [Ref. 11:p. 34] Furthermore, CENTCOM and the JTF had only three or four months to prepare for the deployment, and it sometimes requires eighteen months for complete database development [Ref. 10:p. 11]. Predictably, the makeshift database caused confusion, inefficiency, and delay.

The problem with the original database, of course, was that it underwent constant modification to suit operational realities. Katherine McGrady, a CNA analyst present with I MEF in Somalia, stated:

> The entire TPFDD process for the operation was frustrated by the massive changes to the database that persisted even after the deployment had begun. Some of the changes were understandable. The original TPFDD was based on Desert Shield/Desert Storm -- an operation whose mission was vastly different than that for Somalia. [Ref. 11:p. 35]

As events unfolded and details about mission requirements became apparent, deployment planners updated the TPFDD base through WWMCCS. In doing so, they frequently changed the units to be deployed, movement dates, numbers of personnel, and the types and numbers of equipment to be transported. [Ref. 10:p. 12]

Frequent alteration of the TPFDD base made timely response by TRANSCOM and deploying units exceedingly difficult. Once component commands made changes to the database, CENTCOM and JTF planners validated the TPFDD. TRANSCOM, in turn, would apply the database to determine transportation requirements and assign assets accordingly. CENTCOM and JTF component commanders then notified subordinate units of their embarkation point and departure times. [Ref. 11:p. 34] Yet, the TPFDD was typically validated for only a short period in the future - perhaps just a few days [Ref. 10:p. 12]. This complicated transportation arrangements and the embarkation process.

Complications related to the short planning horizon cost the U.S. unnecessary labor and wasted lift. A lead time of three-to-five days was insufficient to properly adapt airlift

and sealift scheduling to TPFDD changes. AMC could respond at short notice but only by decreasing overall airlift system performance. MSC found much greater difficulty in altering a ship's tasking. Consequently, aircraft were dispatched to load cargo that never appeared. Army equipment was shipped to Mogadishu and never offloaded. Furthermore, some cargo loaded at CONUS ports had to be promptly unloaded because it was later deemed unnecessary for use in Somalia. [Ref. 10:pp. 12-13]

An unstable TPFDD base also caused indecision and delays in the movement of units and equipment. U.S. forces arrived in Somalia considerably later than the planned deployment timeline indicated (Table 6). The bulk of MARFOR was to arrive by D+7 and ARFOR by D+12. By 28 December (D+19), the end of Phase II, only seventy-eight percent of deploying MARFOR personnel were in the theater. Moreover, only forty-six percent of total MARFOR cargo short tons and sixty-one percent of pallets had arrived. The Army fared worse on D+19; twenty-one percent of total personnel, seventeen percent of cargo short tons, and twenty-one percent of the pallets had arrived. An evolving TPFDD in part prevented ARFOR from reaching fifty percent of total strength until 9 January (D+31) for personnel and 10 January for cargo. [Ref. 11:p. 33]

Other factors besides an inadequate database contributed to TPFDD process difficulties. First, the ARFOR commander, who was also the Tenth Mountain Division commander, was not staffed to operate JOPES/WWMCCS. ARFOR relied on the XVIII Airborne Corps, Forces Command, and the JTF Army component, ARCENT, to enter division deployment data. Coordination problems inevitably developed. [Ref. 10:p. 15] Commands subordinate to ARCENT, having TPFDD "write permission," made unilateral changes to the data. Changes to unit types, personnel, equipment, and deployment dates undermined ARCENT's meticulous database construction effort. It took weeks for ARCENT to make necessary corrections. [Ref. 2:p. 44]

A second factor was the difference in data units between the services. CENTCOM used unit line numbers (ULNs) to represent a given unit's position in the deployment OPORDER.

D-Date	Event
D-Day	MV *Lummus* MODLOC off Mogadishu
	Bn (-) of MPF FIE departs CONUS
	JCSE departs CONUS
	JTF HQ (FWD) Departs CONUS
	MARFOR (FWD) Departs CONUS
D+1	JTF HQ (FWD) arrives in AO
	MV *Lummus* offload commences
D+2	JCSE arrives in Mogadishu
	MPF FIE Bn (-) (Rein) arrives in Mogadishu
	MARFOR (FWD) arrives in Mogadishu
D+3	MARFOR TAC CP and ADVON arrives in AO
	MPS-2 arrives in AO
D+5	MARFOR Main Body departs CONUS
	MV *Lummus* offload complete
	MV *Bonneyman* offload begins
D+7	MARFOR Main Body arrives in AO
D+9	MV *Bonneyman* offload complete
	MV *Anderson* offload begins
D+10	ARFOR Bn (-) departs CONUS
D+12	ARFOR Bn (-) arrives in AO
D+13	MV *Anderson* offload complete
	MV *Phillips* offload begins
D+17	MPS offload complete
	Backload of excess equipment and Class V begins
D+30	MPF operations complete

a. Note: CONUS = Continental U.S.; JCSE = Joint Communications Support Element; FIE = Fly-In-Echelon; AO = Area of Operations; SLRP = Survey, Liaison, and Reconnaissance Party; TAC CP = Tactical Command Post; ADVON = Advanced Party.

Table 6. Proposed Deployment Timeline as of 8 December 1992 [Ref. 11]

The Army, on the other hand, organizes TPFDD according to unit identity code (UIC) and unit type code (UTC). Data incompatibility thus frustrated deployment planning. [Ref. 2:p. 47]

Another factor was the lack of trained JOPES/WWMCCS operators available to support component commands. Poor procedural discipline caused by inexperience and infrequent practice was evident during the operation. This resulted in erroneous data entry and unnecessary changes. [Ref. 10:p. 15] This factor, in combination with the others, sometimes produced extreme TPFDD-related problems.

One such case involved the Tenth Mountain Division which arrived in Bayonne, its port of embarkation, with the wrong equipment. Instead of bringing combat service support equipment appropriate for a humanitarian mission, the division brought artillery. The TPFDD did not at first reflect the unusual nature of the operation. As a result, the embarkation of division equipment was significantly delayed. [Ref. 17]

Such embarrassing experiences and uncontrolled database changes prompted the Commander Joint Task Force (CJTF), Lieutenant General Johnson, to intervene on 4 January (D+26). In order to enforce proper TPFDD procedures, the CJTF released a memorandum declaring the following:

1. Without the CJTF's approval, no U.S. unit would be added to the JTF.

2. There would be no changes in the unit deployment timeline without the CJTF's permission.

3. Without CJTF approval, no ULNs or UICs would be added to a five-day validation window.

The effect of the memorandum, however, was unclear. Only five days later, the CJTF announced that the deployment was complete. [Ref. 11:p. 37]

The frustration, wasted effort, and delays caused by an undisciplined TPFDD process are perhaps obscured by the tactical success of UNITAF in Somalia. Because U.S. forces encountered no serious native opposition, a fluid deployment timeline was affordable. After all, Phases I and II were completed well ahead of schedule despite deployment delays. The cost of timeline slippage might have been higher, however, had U.S. forces met with early resistance and had thus required more resources in the theater.

2. Intelligence for Sealift Operations

Operation Restore Hope was conducted in a nation and region about which military planners knew relatively little. MSC had little information about the Mogadishu harbor where extensive sealift operations would be conducted. Nevertheless, the MSC headquarters staff knew enough about conditions in Mogadishu to plan a detailed survey of the port. They also understood that port infrastructure would have to be carried with deploying assets. Yet, planners did not entirely appreciate all the implications of the Mogadishu port's extreme austerity until the deployment. [Ref. 10:p. 5] A shortage of detailed information did cause disruptions in the operation.

Closely monitoring diplomatic events surrounding the Somalia crisis, Vice Admiral Kalleres and his staff began to collect intelligence on the Mogadishu port. Three or four months before D-day, they began collecting all available published resources on the region including charts and port directories. Most of the material was unreliable. According to Captain Flood, then assigned to the MSC headquarters staff, "We were able to ascertain that the data we had was about three or four years old; we weren't sure what the current conditions in that port were." MSC, therefore, had to base initial sealift planning on certain hypotheses about the port.

First, the MSC staff expected that the port could likely accommodate ships with a maximum draft of up to thirty-two feet - at least at the seaward berth. The planners knew from dated soundings that a ship with a maximum draft of thirty-three or thirty-four feet could likely moor at the seaward berth. The harborside berth was probably less deep. They also knew, however, that the harbor had deteriorated since the last survey. Approximately thirty-two feet, therefore, seemed a reasonable draft limitation. [Ref. 17] A *Bobo*-class MPS such as MV *Lummus* had a maximum draft of twenty-nine feet, and a *Hauge*-class ship had a thirty-three-foot maximum draft [Ref. 15:p. 22]. MSC thus assumed that a MPF ship should be able to moor at high tide at the seaward pier [Ref. 17].

MSC was more wary about mooring an FSS at Mogadishu. The headquarters staff convinced Admiral Kalleres that it would be impossible to maneuver an FSS in the port without very skilled pilots and tugs. Of course, the port lacked such service. [Ref. 17] They

warned that a FSS's nearly thirty-five-foot maximum draft and 946-foot length [Ref. 20] would make navigation very hazardous in the small port. Nevertheless, the staff took steps to minimize the danger. They identified experienced harbor pilots serving in the Navy Reserve and chartered four tugs. [Ref. 17] A load limit of 7,000 tons was also imposed on the FSSs [Ref. 10:p. 5]. With competent pilot and tug service and load restrictions, MSC expected to moor an FSS at the seaward berth.

A third assumption of MSC -- and U.S. military planners in general -- was that absolutely no host nation support could be expected. They knew that even basic services such as water and electrical power would be unavailable. MSC and MARFOR therefore planned to deploy everyone and everything required to conduct port operations: tugs, pilots, material handling equipment, bulk supplies such as fuel and water, generators, etc. [Ref. 10:p. 5]

This valuable assumption, of course, was wholly correct, and the logistical burden was not underestimated. In the words of USCINCCENT, General Hoar, "Deploying to Somalia was like going to the moon: everything needed had to be brought in or built there." [Ref. 21:p. 7] Early deployment of port infrastructure items saved U.S. forces enormous time and inconvenience. Failure to anticipate the extent of this requirement would have greatly disrupted the deployment and perhaps jeopardized the operation.

MSC's assumptions about port accessibility proved mostly correct, but they could not of course substitute for detailed intelligence. The FSSs could moor at a seaward berth. Because these ships were loaded for a non-combat mission, they were much lighter. Draft was never a problem. Both the harborside and seaward berths were accessible to MPF ships - at high tide. On one occasion, however, MV *Lummus* sat on the harbor bottom when the tide receded. [Refs. 13 and 14] In briefing Admiral Kalleres upon his return to CONUS, Rear Admiral Perkins stated that he wished he had better human intelligence at the port prior to the deployment [Ref. 12].

However, even after a detailed survey was conducted, conditions in the region were still not entirely appreciated. High wind and seas are familiar phenomena off the Somali coast. Yet, the full effect of weather on port operations was unanticipated and often

underestimated. The vain attempt to moor SS *Green Valley* at Mogadishu served as an example. So too did the aborted efforts by MV *American Cormorant* and the LASHs to conduct in-stream offloads in Somali waters.

Such oversight caused the delivery of important Army cargo to be delayed. The late arrival of the ROWPU barge, also due to high seas, resulted in a theater-wide water shortage. Had CENTCOM, the JTF, and the CMPF been more aware of predictable weather conditions earlier, alternate transportation might have been arranged for critical cargo. Perhaps some of the problems caused by late delivery, such as the water shortage, might have been avoided.

No amount of planning or preparation, however, can completely obviate uncertainty in any military operation. Clearly, the TPFDD developmental process and intelligence were imperfect during Operation Restore Hope. Problems stemming from these deficiencies were, in part, avoidable. Others were not. An unstable deployment database and sparse intelligence were largely functions of short-notice planning and an unfamiliar environment. The Somalia intervention, after all, was a unique operation; a certain amount of improvisation was to be expected.

B. PORT CONTROL

Shipping at Mogadishu was remarkably well-managed considering the initial condition of the port infrastructure. In just over a month, U.S. forces converted an abandoned facility into a fully-functional, modern seaport. The accomplishment demanded experienced seamanship, effective communications, close cooperation among military units, and sometimes skillful diplomacy. Above all, effective port control required a strong central authority to enforce operational priorities. The harbor pilots, tug and shipmasters, COMPSRON TWO, and the CMPF deserve credit for effective port management.

1. Tug and Pilotage Operations

Skillful seamanship was vital to the success of port operations if not the expedition itself. Captain Flood remarked, "If it had not been for very experienced [pilots] and masters ...we would have had a lot more trouble." Pilots and masters had to maneuver very large

ships in a small, shallow port despite high wind and six-foot swells. For any ship, port entry required delicate choreography between the pilot and tugs. Furthermore, ship movements were frequent and on a tight schedule. Shiphandlers of lesser experience may not have been able to contend with the extreme conditions at the Mogadishu port. Had pilots and masters of such quality not been available at Mogadishu, shipping operations might have met with delay, damage, and perhaps even disaster.

Mogadishu tug and pilot services were not, of course, without their limitations. Because Mogadishu weather conditions generally worsened as the day progressed, pilots were unable to moor or unmoor ships in the afternoon. All ship movements were conducted each day during a "morning window." The sea state was so unfavorable during the summer monsoon that port traffic came to a virtual standstill. Pilots conducted only a few movements between July and September. [Ref. 17]

Moreover, not all the tugboats were well-suited for ship-handling. *Smit-Lloyd 111*, for example, could not go alongside certain ships, especially FSSs. The large tug's superstructure was too high and would contact the hulls of some ships. *Smit-Lloyd 111* was instead used extensively as a utility tug. The Army tugs discharged from MV *American Cormorant* were of even lesser use to the Mogadishu harbor pilots. The tugs' failure to tow the ROWPU barge from Kismayo demonstrated that they were too small for moving ships in high seas. Also, the Army tugmasters and crews were inexperienced in ship-maneuvering operations. Soon after the tugs arrived from Mombasa in February, they were employed mainly for personnel transfers between ships. Only tugs *Barbara*, *Bison II*, and *Fast Fox* were used primarily for shiphandling. [Refs. 14 and 17]

Although no major accidents occurred during any of the hundreds of ship movements, there were a few minor incidents. At least two collisions occurred between tugs and moored ships. In one such incident, tug *Bison II* struck MV *Hauge* in the Mogadishu anchorage. The tug was attempting to transfer passengers and, in the process, dented the ship's hull. MV.*Hauge* underwent temporary repair in Mombasa. [Ref. 14] Furthermore, an FSS struck the sunken Somali tug at the seaward berth. Buoyant markers placed over the wreck disappeared during the summer monsoon. The ship, however, sustained no significant

damage. [Ref. 17] These occurrences generated certain inconveniences but did not significantly hinder operations.

Thus, despite minor limitations and setbacks, the Mogadishu tug and pilotage services ensured a safe and regular rotation of ships at the port. In doing so, they helped maintain a relatively stable flow of cargo and equipment into and out of the theater. Successful force deployment and redeployment, therefore, was partly to their credit.

2. A Port Authority

Equally important for efficient port operations were the efforts of the local MSC commanders, the CMPF and COMPSRON TWO, toward establishing a Mogadishu port authority. Over the course of a month, MSC personnel devised procedures and an organizational structure for comprehensive port management. Their work culminated in the creation of the MSCO in January of 1993. The office centralized communications between local military units, ships, pilots and tugboats, and the MSC chain of command. When Captain Allee relieved Admiral Perkins as the CMPF on 15 January, a fully-functional MSCO provided an effective means to coordinate port functions.

The evolution of the MSCO was not without setbacks. Maintaining reliable communications with all parties having stakes in port operations was often difficult. Communication, of course, was MSCO's central function. To fulfill the function required an array of media including satellite telephones and printers, facsimile machines, VHF radios, and landlines. Spartan Mogadishu was hardly an ideal place for a communications center, and the MSCO staff struggled to keep its equipment operational.

Just acquiring the communications equipment was frustrating enough. Communication with the MSC organization and ships at sea required an International Maritime Satellite (INMARSAT) unit. A portable unit was air-shipped to Mogadishu from MSC, Far East (MSCFE) in Japan, but it was nearly lost en route to MSCO. A detachment from U.S.S. *Tripoli* stationed at the Mogadishu airport inadvertently recovered the unit and transferred it to the ship. It took the MSCO staff several days to locate and retrieve the unit from a remote space aboard *Tripoli*.

Yet, assembling and getting the unit to function reliably was a greater challenge. Unfamiliar with the technology, the MSCO and MPSRON-2 staff spent several days installing the satellite dish and related unit equipment. They were only partially successful, and the unit worked only intermittently. Finally, a technician from MSCFE was dispatched to correct problems with the INMARSAT system. The unit was eventually made to work; although, the MSCO staff continued to experience occasional problems in operating the system.

Communication with local units was also often frustrated. The MSCO duty officers maintained contact with local shipping using a VHF radio installed at the port administration building. Electrical power service in the building was frequently interrupted - thus also radio communication. Other MSCO communications, of course, were likewise affected. Power came from an Army portable generator which attendants occasionally forgot to refuel. Generator maintenance also caused frequent idle periods. Although the MSCO staff could alternatively rely on battery-powered VHF handsets, the radios and battery chargers degraded over time with frequent use. Consequently, ships at anchor sometimes experienced difficulty contacting the MSCO. [Ref. 14]

Despite limited technical experience and poor accommodations, MSCO did ultimately establish reliable communications with its clients. Thus, the CMPF and COMPSRON TWO succeeded in creating a competent port authority which greatly facilitated Mogadishu shipping operations. When 7th TRANS assumed *de jure* responsibility for port operations on 15 January, the instruments for control were already well in place [Ref. 17].

3. Shipping Priorities

Logically, the logistical requirements of forces in the field should have dictated transportation priorities at Mogadishu. It follows that the sequence of cargo deliveries and equipment backloads should have reflected those priorities. In the first month of port operations, MARFOR and the CMPF had little trouble coordinating offloads to meet clear JTF needs. By the second month of operations, however, port operations had become more

complex and force logistical requirements less certain. The JTFSC, therefore, had to establish a system for prioritizing shipping amidst competing demands.

In December and early January, when Admiral Perkins controlled port operations, transportation priorities were rarely in doubt. MARFOR was preoccupied with supplying water, fuel, and MREs to the troops in the field. Ships carrying these sustainment supplies, therefore, were offloaded first. Whenever conflicts arose over movement priorities, MARFOR units were consulted, and the matter was easily resolved. This ad hoc system sufficed as long as forces faced critical sustainment item shortages.

By late January, when the JTFSC assumed most theater logistical responsibilities from MARFOR, the situation had changed. Forces in the field no longer faced a severe water shortage, and fuel was in abundance. Furthermore, the Mogadishu port was engaged in four different shipping activities: the MPF backload, the backload of other forces, seaborne force sustainment, and humanitarian relief operations. Pier space and labor was limited, so the activities could not occur simultaneously. Yet, whether it was more important to receive sustainment cargos before backloading equipment was unclear. More difficult conflicts soon arose. A choice among the competing priorities had to be made. [Ref. 11:p. 50]

JTF guidance at that point would have been useful but did not then exist. On 24 December, shipping priorities were discussed by representatives of the JTF, 1st FSSG (Forward), and CMPF who comprised a Joint Transportation Board (JTB). The board, however, made few decisions at this meeting. The JTB did address priorities for movements to the theater but not within the theater. Also, the board failed to assign anyone responsibility for enforcing theater transportation priorities. Isolated parties within the JTF staff met informally to discuss the problem, but they could not devise a comprehensive stratagem for all transportation assets. Consequently, efforts to resolve the issue languished though the following month despite mounting confusion. [Ref. 11:pp. 50-51]

The JTB felt compelled to finally decide theater transportation priorities on 9 February. The board established the following hierarchy of cargo preference:

1. Force sustainment,

2. Redeployment items,

3. Support to coalition forces,

4. Contractor supplies, and

5. All other supplies.

Unlike before, the board widely disseminated their decision in order to effectively enforce the priority system. [Ref. 11:p. 51]

The slow development of shipping priorities, however, never seriously hampered Mogadishu port operations. Moreover, occasional incidents involving tugboats and MSCO communications difficulties did not jeopardize control of the harbor. In light of the port's original condition, more problems might have been expected. MSC personnel completed the port's impressive transformation before relinquishing control to 7th TRANS on 15 January, an accomplishment from which little detracted.

C. SEALIFT

Ninety-five percent of all force supply and equipment tonnage delivered and retrieved from Somalia went by sea [Ref. 2:p. 47]. The scale of force deployment to the theater was only five percent of Operations Desert Shield and Storm [Ref. 10:p. xi]. Nevertheless, the sealift of military cargo to and from Mogadishu was a daunting task. During fiscal year 1993, a total 561,000 tons of cargo, including 8,757 vehicles and 2.4 million square feet of other equipment, were deployed to Somalia aboard MSC ships [Ref. 19:p. 15] Strategic sealift assets, of course, transported the lion's share of this cargo. Sealift, then, was a vital component in the success of theater logistical operations and thus the entire expedition.

Given the size and complexity of sealift operations, some problems were bound to occur. The undeveloped TPFDD and limited local intelligence no doubt hindered sealift operations, causing late ship departures and offload interruptions. Other factors frustrated sealift operations as well. However, the MPF offload was not significantly affected by planning problems. In fact, maritime prepositioning offset delayed cargo delivery from

CONUS and can be credited for an early end to Phases I and II. Furthermore, the backload of force equipment from Somalia avoided problems encountered during the deployment. Overall, sealift operations were rather well-executed given the unique nature of the mission.

1. Army Sealift

The transportation of ARFOR supplies and equipment from CONUS proved the most troublesome aspect of sealift operations. The effort was fraught with delays arising from several factors. Aside from TPFDD-related difficulties, the four factors contributing most significantly to schedule slippage are as follows:

1. Army sealift ships were in CONUS ports far longer than had been planned. Delays in ship departure were attributable to the effects of poor weather on cargo loading evolutions. Mechanical failure also postponed cargo shipment as was the experience with the crane ship *Corpus Christi*.

2. Some ships had to load at several ports. USNS *Denebola*, for example, received cargo at three CONUS ports. Sealift planners assumed that there would be sufficient cargo to fill the ships at each port and thus underestimated total in-port time.

3. A propulsion casualty slowed Capella en route from CONUS to Somalia. The FSS consequently stopped in Rota, Spain for inspection. For the remaining part of the voyage, the ship could make only twelve knots. The deployment timeline assumed a 23.5-knot transit for FSSs.

4. Only one FSS at a time could moor at Mogadishu. The seaward pier could accommodate FSSs, but space was limited. Some ships were therefore slowed en route to prevent backlogs at the port.

Chronic shipping delays caused the build-up of Army equipment in theater to proceed much more slowly than planned. [Ref. 10:pp. 36-37] Figure 4 illustrates the gap between the actual amount of Army cargo delivered to Mogadishu and the sealift capacity that might have been available without timeline slippage.

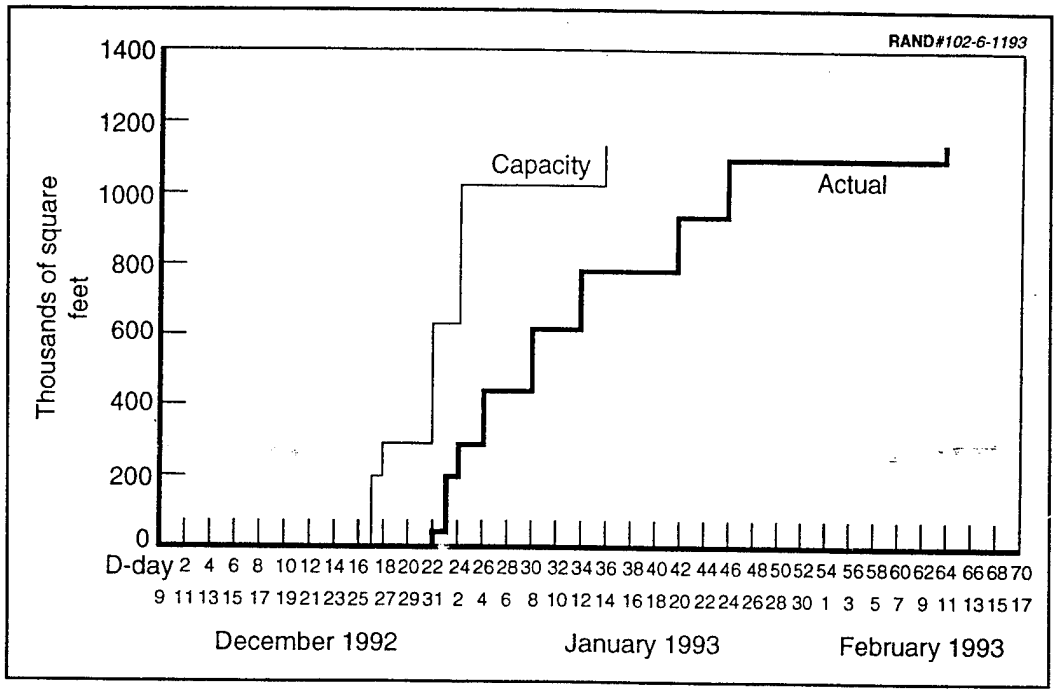

Figure 4. Army Sealift Deliveries to Mogadishu [Ref. 10]

2. MPF Offload

The offload of the four MPSs at Mogadishu proceeded much more closely to schedule. This operation was indirectly affected by TPFDD instability and did encounter a few other minor impediments. Short delays, however, did not seriously constrain the build-up of MARFOR equipment and supplies in Somalia.

What delays did occur stemmed in part from the late arrival of MARFOR personnel, another consequence of an unstable TPFDD base. Marines of 1st FSSG (Forward) assigned to help conduct the offload did not arrive in Mogadishu until D+2, 11 December. Furthermore, vehicles and equipment belonging to units not yet in Mogadishu saturated the port staging area after *Lummus* completed its offload on D+6. MV *Anderson*, the next MPS in rotation, was thus unable to discharge cargo until the staging area could be finally cleared by arriving MARFOR units.

Four other factors complicated the efforts of the CMPF and 1st FSSG to offload the MPF.

1. Some types of equipment not needed for the operation were unloaded in order to access required cargo. Items useful for MARFOR's humanitarian mission were interspersed with combat-related items. An MPS's configuration makes for difficult and timeconsuming retrieval of selected cargo.

2. Derelict Somali lift trucks and other vehicles fouled the staging area. The obstacles had to be removed to begin offloading.

3. Native interlopers occasionally interrupted operations until better security could be established.

4. Communications between the JTF and CMPFwere poor in the early days of the operation. It was therefore initially difficult for the CMPF to anticipate unit arrivals and coordinate the offload accordingly.

The factors did collectively slow progress but not significantly.

As shown in Table 7, the actual MPF offload dates deviated only slightly from the JTF timeline. [Ref. 11:pp. 39-40] Offload personnel overcame most of their early difficulties, and the flow of MPF materials into the theater then quickened.

MPF ship	Actual offload dates	Planned offload dates
MV *Lummus*	12–15 December	10–14 December
MV *Anderson*	14–19 December	18–22 December
MV *Bonneyman*	20–23 December	14–18 December
MV *Phillips*	26–28 December	22–26 December

Table 7. Planned and Actual MPF Offload Dates [Ref. 11]

3. Maritime Prepositioning

The deployment of the MPF ships more than compensated for the delay of Army sealift assets from CONUS. Anton Jareb, a CNA representative who observed JTF operations in Somalia, commented:

> The contribution of prepositioned supplies to Operation Restore Hope cannot be overestimated. The self-sufficient MPF ships were offloaded in a port with practically no infrastructure in a timely manner. This allowed the JTF to proceed with a fast pace of operations. [Ref. 9:p. 26]

According to Jareb, the "real value" of the MPF was that it enabled the rapid accumulation of U.S. forces in Somalia. [Ref. 9:pp. 26-28] The timely build-up of forces, in turn, enabled the quick occupation of relief sectors and thus the early completion of Phase II.

Indeed, for three weeks after D-day, logistical support to U.S. and coalition forces came almost entirely from the MPF. Strategic airlift was at first exclusively committed to passenger transport, and the first FSS did not arrive in Mogadishu until early January. [Ref. 9:p. 26] Most importantly, forces initially depended on the MPF ships for bulk fuels and potable water. The MPF also provided the only ground transport vehicles early in the deployment [Ref. 11:pp. 41-48]. As intended, the MPF provided virtually every item required to conduct the operation until other sealift and sustainment assets arrived from CONUS and Europe.

The MPF was never intended to provide support for so many forces so deep in-theater for so long. According to Marine Corps doctrine, the 1st FSSG should have been able to distribute enough MPF supplies and equipment for 16,500 men within a fifty mile radius for no more than thirty days. By D+50, however, the MPF and 1st FSSG were supporting over 30,000 men, some over 350 miles from Mogadishu. [Refs. 9 and 11] Prepositioned ground transportation assets were stretched, and MARFOR eventually had to use aircraft to alleviate linehaul shortages in the country [Ref. 11:p. 48].

Nevertheless, the swift expansion of military operations into the Somali interior would not have been possible without maritime prepositioning [Ref. 9:p. 25]. The slow progress of Army sealift and AMC's early preoccupation with personnel transportation underscores the significance of an MPF presence. U.S. tactical efficiency in Somalia and a brief Operation Restore Hope are in large part owed to the MPF.

4. The Backload

The backload and redeployment of sealift ships benefitted immensely from lessons learned during the deployment -- the significance of a stable TPFDD base in particular. When MV *Phillips* began its backload on 19 January, the JTF had a fully-developed redeployment database. Captain Flood clarified the value of this data:

> The impact of having good TPFDD and [thus] a good redeployment schedule is that it made [MSC's] sealift planning so much easier.... We basically knew which units were going to redeploy and in what time frame - within an accuracy of three or four days. [Ref. 17]

The improved TPFDD allowed backload operations to conform much more closely to the JTF redeployment timeline.

For MSC, an accurate database provided an additional advantage: cost savings. The command now knew what types and quantities of equipment were to be redeployed and when with greater certainty. This facilitated the scheduling of FSSs and RRF ships already in service, and allowed minimal reliance on expensive time charters. If necessary, FSSs and RRF ships could be made to wait off Mogadishu indefinitely if necessary and, compared to time charter ships, at a much lower marginal cost.

As with all other aspects of the operation, the backload had its setbacks. Unit commanders in the field were reluctant to relinquish certain vehicles and equipment. The commanders were justifiably concerned about mounting Somali hostilities and did not want to jeopardize their units' readiness. Consequently, they retained as much equipment as possible until the last minute and then attempted to redeploy everything at once. Of course, this practice challenged the JTF timeline and frustrated the Embarkation Control Group. Whenever disputes arose over the pace of unit redeployment, the field commanders prevailed in the interest of security. [Ref. 17]

Despite the occasional breach of JTFSC/MARFOR redeployment procedures, the backload of redeploying sealift ships proceeded much more predictably than the deployment.

On the balance, the mission in Somalia was well-served by strategic sealift. Operation Restore Hope would not have proceeded as quickly had it not been for the self-

sufficient MPF. The sluggish build-up of ARFOR support equipment resulting from ship deployment delays was made far less significant by the immediate availability of prepositioned stocks. The fact that only seventeen percent of Army cargo short tons arrived in Somalia by 28 December (D+19) did not matter all that much; Phase II was already over thanks in large part to the MPF. Considering also the efficiency of the backload, sealift should be seen as a successful part of the operation.

D. SUSTAINMENT

As with sealift operations, the seaborne sustainment of forces in Somalia produced both disappointments and successes but ultimately proved adequate to support the mission. Sustainment efforts during the early days of the expedition were sometimes strained. Unforseen events and underestimated coalition demands initially complicated efforts. Nevertheless, sustainment operations improved dramatically by the end of January 1993. Forces at first faced shortages of certain commodities, especially water, but later became more concerned about controlling surpluses. Although shortages did potentially expose the expedition to risk, seaborne logistics did far more to expedite operations than to constrain them.

1. Logistical Support for Coalition Forces

U.S. commanders in Somalia greatly underestimated the extent to which coalition forces would come to rely on U.S. sustainment supplies. As early as D+1, it was apparent that many coalition forces were not logistically self-sufficient and that the U.N. was unable to assist them. Ironically, the JTF OPLAN tasked its components to "establish accountability upon the receipt of allied countries' or host nation's offers of assistance of supplies, vehicles, and equipment." Because the CJTF wanted to maximize foreign participation, MARFOR and the JTFSC extended common-item, common-user support to coalition units. The courtesy, however, significantly burdened early efforts to build adequate supply stocks in Somalia.

Initially, U.S. logistics units and coalition forces arranged support through a pre-existing cross-service agreement. Later, the JTF provided more specific guidance. U.S.

units of the JTF were to provide support as requested "according to their capability, but not to [their] detriment." There were restrictions on certain items: ammunition (Class V), major end items (Class VII), and spare parts (Class IX). Class V could not be issued without CJTF permission except in emergencies. Only in-theater Class IX and no Class VII were to be issued to coalition units. For all items provided, strict accountability was to be maintained pending eventual reimbursement by client coalition states.

In addition to straining force sustainment operations during the first two months of Operation Restore Hope, U.S. support of coalition forces bred chronic dependency. The total reliance of some foreign units on U.S. logistical support thus complicated the transition to UNOSOM II during Phase IV. [Ref. 9:pp. 20-21]

2. Water

The Achilles heel of the expedition in arid Somalia might have been a shortage of potable water during December and January. Anton Jareb commented:

> The numbers show that there was little margin for safety. That is, because water production capability did not allow for the build-up of surplus potable water, the JTF was vulnerable during the first period of support. [Ref. 9:p. 33]

Because MARFOR lacked sufficient water production and distribution assets, the JTF tapped MPF stocks and contracted sources. However, production still fell short of MARFOR objectives, and theater water supplies barely maintained pace with rising force demand. Yet, minimum force requirements were always satisfied, and, by February, JTF water production improved so much as to yield a respectable surplus. [Ref. 9:pp. 31-33]

The factors which initially made water availability a field commander's top concern were (1) the small number of water purification units in the theater, and (2) the concentration of those assets in Mogadishu [Ref. 9:p. 33]. There were no uncontaminated water sources in Somalia; all water for military consumption was either purified or imported. Forces were to rely on field ROWPUs for the bulk of their water supplies. [Ref. 9:p. 29] However, the diversion of the MV *American Cormorant* and the subsequent late arrival of the Army ROWPU barge greatly diminished theater water production capacity [Ref. 9:pp. 33-34].

Furthermore, the limited number of MARFOR ground transportation assets complicated the regular delivery of bulk water supplies from Mogadishu to the hinterlands [Ref. 11:p. 48].

ROWPUs used by U.S. forces in Somalia purified salt or brackish water from the Indian Ocean, rivers, and eventually from wells and the Mogadishu water supply [Ref. 11:p. 45]. MARFOR had several 600 GPH units, and the Army had 3,000 GPH ROWPUs in the theater. Each type could function for approximately twenty hours in a day and produce an average 10,000 and 50,000 gallons per day, respectively. The majority of units were located at Green Beach where 1st FSSG (Forward) established a water storage facility. The Green Beach water farm was the largest of eighteen storage sites in the theater and could hold 300,000 gallons. Given force consumption, however, the ROWPUs could not purify enough water to come even close to storage capacity. [Ref. 9:pp. 32-33]

Although DoD grossly overestimated per capita potable water consumption, organic MARFOR water production failed to satisfy even the adjusted target. As shown in Table 8, the standard DoD multi-service water consumption factors amounted to twenty gallons per man per day [Ref. 11:p. 47] The Gulf War experience, however, demonstrated that the figure was inflated. MARFOR therefore used a planning factor of five gallons per man per day and set a stock objective of two day's supply at each HRS. The stock objective was lower than that for other commodities because potable water became undrinkable after two or three days. Nevertheless, during the first period, water production fell short of this objective. [Ref. 9:pp. 30-31]

Unclassified

Use[a]	Gallons/Day
Drinking	3.0
Hygiene	2.7
Food preparation	3.0
Laundry (6 lb/man/week)	2.1
Medical	
Hospital (65 gal/bed)	3.5
Medical treatment	0.2
Heat treatment	0.2
Graves registration	0.2
Vehicle coolant	0.3
Construction	1.5
Water evaporation	1.7
A/C maintenance	0.2
Other	1.4
Total	20.0

a. An additional 12.4 gallons per man per day required for each NBC decontamination operation.

Table 8. DoD Multi-Service Water Consumption Factors [Ref. 9]

To augment water stocks, the JTF and MARFOR depended on the MPF. COMPSRON TWO rotated each of the five MPSs at the anchorage off Green Beach where the ships discharged water to the 1st FSSG water farm via the AABWS. The MPSRON-2 staff reported the MPS rotation schedule and discharge figures to the JTF at daily meetings convened to discuss logistics concerns. That a MPS be "on the water hook" almost every day remained a JTF requirement until late February. [Refs. 11 and 14] In January, MPF ships produced 50,000 gallons per day on average [Ref. 11:p. 34], one third of theater-wide daily consumption [Ref. 11:p. 38].

Bottled water further bolstered MARFOR stocks. The JTF contracted for several shipments from commercial sources in the region. Some bottles arrived in Mogadishu by ship and were later distributed to field units by truck. Other loads were air-shipped directly

to remote HRSs each day. Although bottled water was used mostly for drinking, troops in the Somali countryside often used it for hygiene as well. The daily planning factor for bottled water was three liters per man in Mogadishu and eleven liters in the field. Bottled water shipments significantly relieved the strain on purified water stores. [Ref. 11:p. 34]

Even still, the JTF was unable to accumulate enough potable water for a sizeable reserve until the second logistical support period. Figure 5 illustrates storage trends. Despite the infusion of MPF and bottled water, water stocks just barely kept ahead of force consumption for the first fifty days of operations [Ref. 9:p. 31]. In February, however, daily production increased five-fold to 500,000 GPD, thanks in part to the arrival of the ROWPU barge. Total storage capacity in Somalia nearly doubled to 900,000 gallons. [Ref. 9:p. 44]

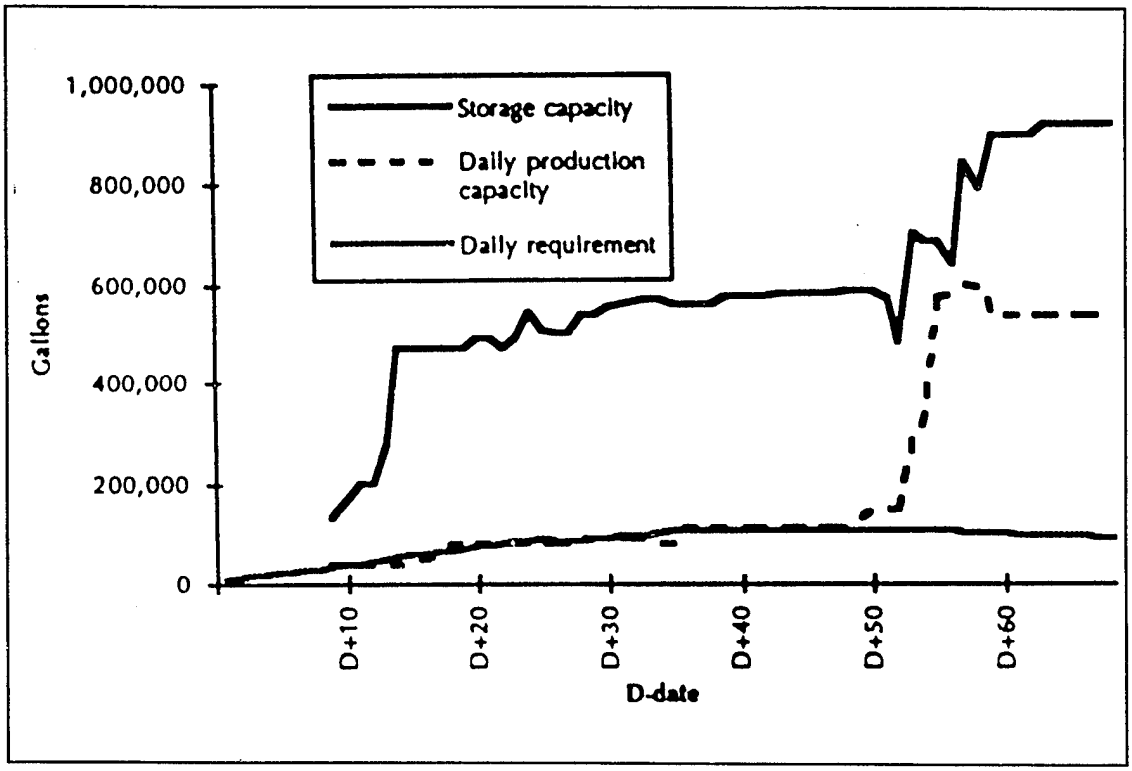

Figure 5. Theater Water Production and Force Requirements [Ref. 9]

JTF repairs made to wells in the northwestern Mogadishu district of Afgooye in January further contributed to the rising inventory [Ref. 9:p. 34]. Well repairs increased the flow of water into the Mogadishu reservoir in the northeast part of the city. There ROWPUs were connected to the reservoir and a distribution depot established in the vicinity. This water farm greatly facilitated the transportation of water to forces in the interior. Tanker trucks could fill-up at this storage site and avoid the circuitous route to and from the Mogadishu airport. [Ref. 9:p. 45]

The contrast in water production capacity between the second and first logistical period was striking, but the early potable water "shortage" should be kept in perspective. The gap between MARFOR stock objectives and actual storage concerned the JTF for good reason. Unforseen events might have transformed the shortage into an operational crisis. Having a substantial inventory is insurance against uncertainty in military operations. Nevertheless, in-theater water production always met minimum force demand (Figure 5). U.S. and coalition troops did not face privation as a result of not meeting the stock objectives.

3. Fuel

Unlike potable water stocks, there was always more than enough fuel available for military units in Somalia by any standard. The MPSs and OPDS tankers supplied enough fuel to sustain operations for one hundred days based on average consumption. During the first -- and most active -- support period, actual consumption averaged 100,000 gallons per day. Peak consumption was 250,000 gallons. Because the humanitarian mission in Somalia required few vehicles, including fixed-wing aircraft, fuel stocks were unstrained throughout the operation. [Ref. 9:pp. 35-36]

MARFOR first exclusively relied upon the MPF for JP-5 and MOGAS until 1st FSSG (Forward) could establish a fuel farm at Green Beach. The MPSs collectively carried approximately five million gallons of JP-5 and a large quantity of MOGAS for coalition vehicles. [Ref. 9:p. 35]

Once the fuel farm became operational in mid-December 1992, the fuel facility received bulk fuel mainly from the MSC OPDS tankers via the AABFS. Of a total theater

storage capacity of 3.4 million gallons, the Green Beach fuel farm had three million. The storage site became a distribution hub for satellite facilities around the country. [Ref. 9:p. 36]

Over the course of Operation Restore Hope and UNOSOM II, *American Osprey* and SS *Potomac* together discharged almost 60,000 tons of petroleum at Mogadishu [Ref. 19:p. 15] This quantity gave the JTF and U.N. forces a comfortable margin of safety in the event of crisis.

4. Dry Cargo

Initially, force requirements for dry cargo were grossly overestimated. Theater logisticians, therefore, became concerned more about controlling inbound shipments than meeting demands during the second support period.

Force sustainment became a high priority when JTFSC assumed control of logistics operations in Somalia in late January 1993. Early force requirement estimates for dry cargo such as MREs, spare parts, and construction materials ranged between 500 to 1,000 containers per week. The JTFSC quickly discovered, however, that theater demand was hardly so robust. Typically, sufficient containerized supplies were already available aboard ships in the Mogadishu anchorage. In all, sustainment ships delivered perhaps 1,000 containers to the theater during the operation.

The transshipment of containers at Alexandria as arranged by MSC and MTMC thus proved an efficient system for seaborne sustainment. Containerized cargo shipped from CONUS could accumulate in Egypt until required by forces in Somalia. Only then would SS *Gopher State* or MV *Strong Virginian* be dispatched from the theater to retrieve them. This system had two advantages: (1) it gave the JTF the means to better control in-theater dry cargo inventories, and (2) it spared MSC the added expense of time-chartered shipping. *Gopher State*, a RRF ship, and *Strong Virginian*, a "prepo," could be detained indefinitely at Mogadishu at a negligible marginal cost - unlike a time-chartered vessel. [Ref. 17]

Yet, early forecasts of force dry cargo requirements did result in wasted lift. The most notable example was MARFOR's unnecessary employment of MV *Maersk Constellation.*

In December of 1992, 1st FSSG started the withdrawal of sixty days of sustainment supplies from the Prepositioned War Reserves (PWR) in CONUS for shipment to Somalia aboard MV *Maersk Constellation.* Although the unit intended to use the supplies to sustain forces from just D+31 until D+60, it withdrew a sixty-day block in order to fill the ship. The supplies included MREs, spares, and construction materials. Because 1st FSSG considered the items time-critical, it decided not to use the transshipment and shuttle system being devised by MSC. Ironically, this alternate arrangement proved far slower.

To transport, containerize, and load a sixty-day block of supplies, predictably, took a long time. It took nearly three weeks just to transport the supplies from several locations to a single point of embarkation, Port Hueneme. JTF headquarters further complicated the process by unilaterally canceling thirty days of supplies already en route to Port Hueneme. By the time the remaining supplies were containerized and loaded, MV *Maersk Constellation* was significantly delayed.

The ship left on 15 January and arrived in Mogadishu a month later - too late. The redeployment of forces had significantly reduced dry cargo requirements, and most of the ship's cargo was unneeded. [Ref. 9:pp. 49-50] Countless man-hours and hundreds of barrels of fuel were therefore essentially wasted during the two-month-long effort to transport MARFOR sustainment supplies to Somalia.

Despite some obvious inefficiencies, efforts to provide forces with adequate dry cargo sustainment must be considered satisfactory. After all, contending with too many supplies is much preferred to not enough, especially in military operations.

E. SHIP CHARTERING

In assigning ships to support operations in Somalia, MSC used the following policy for order of preference: commercial ships already on long-term charter first, most ready government-owned ships second, and time charter ships last. The policy reflected both strategic and economic concerns. TRANSCOM and MSC desired to reserve some strategic sealift assets, namely FSSs and RRF ships, in case of a concurrent military contingency. Furthermore, MSC wanted to minimize high-cost time charters in favor of ships already on

contract or government-owned. Because activating government ships involved a considerable expense as well, the command preferred ships already on contract. When only government ships were available, MSC preferred the FSSs to the RRF ships which are more costly to activate. MSC's assignment policy attempted to balance the two objectives. Consistent with the policy, MSC assigned MV *American Eagle* and MV *American Falcon,* ships on long-term MSC charter, followed by the FSSs for the sealift of Army equipment. [Ref. 10:p. 36]

Yet, circumstances did arise which forced MSC to depart from policy to some extent. The command did have to activate the RRF ship SS *Gopher State* to replace the crane ship *Corpus Christi.* Furthermore, MSC did reluctantly use time charters in special situations. One such case involving the Greek-registered *Mediterranean Sky* caused MSC considerable grief in addition to added expense.

As UNITAF units began to redeploy in late January, JTF became concerned about the prospect of losing passenger aircraft to hostile fire over southern Somalia. This fear inspired the idea to transport redeploying personnel by sea from Mogadishu to Mombasa, Kenya. There they could be flown in relative safety to CONUS and Europe. To accomplish the task, the JTF encouraged MSC to time-charter a passenger ship. MSC responded by chartering the liner *Mediterranean Sky* out of Europe.

Mediterranean Sky proved to be a bad choice. Soon after embarking two MSC representatives, it was discovered that the ship was in very poor condition. Furthermore, as is typical of many Mediterranean liners, the ship lacked an evaporator and could not produce water. On at least one occasion in Mogadishu, a ROWPU had to be aligned to the ship to fill its potable water tanks. The ship was altogether inadequate as a troop shuttle. [Ref. 17]

Another incident involved a ship time-chartered to transport bottled water from the Middle East. Because of improper stowage, a large percentage of the bottles lay crushed in the hold upon the ship's arrival in Mogadishu. [Ref. 14]

The employment of time-chartered ships was nevertheless the exception to the rule. MSC adhered to its chartering policy to the maximum extent possible thereby avoiding unnecessary expenses, unpleasant surprises, and overextension of its strategic assets.

F. LIAISON WITH GOVERNMENT AUTHORITIES

Failure to properly deal with U.S. and foreign government agencies sometimes caused unnecessary inconvenience in the conduct of maritime operations. In one case, a breach of protocol resulted in the diversion of a ship and the lengthy postponement of its offload of important cargo.

That particular case involved the SS *Green Valley* which unsuccessfully attempted to gain port clearance at Mombasa. The Kenyan port authorities ostensibly denied entry because of the ship's length. They claimed that the ship would be unable to safely moor or offload ammunition barges in the small harbor. The more likely reason was that U.S. representatives mishandled the various formalities expected by Kenyan officials. After all, MV *American Cormorant* was able to later enter Mombasa and discharge lighterage without objection from the Kenyans. In the words of Captain Flood, "We probably didn't grease the skids right." [Ref. 17]

Another incident occurred during the initial stages of the deployment at Diego Garcia, a British Indian Ocean Territory. Marines constituting the MPF OPPs arrived at the island's airport with firearms without having been granted a waiver. The commander of the U.S. naval installation at Diego Garcia detained the parties at the airport for the customs violation. They were very nearly expelled from the island and might have been prevented from joining the MPF. Fortunately, the base commander and British authorities relented. [Ref. 14]

A third incident involved the U.S. Coast Guard (USCG) during the redeployment of MPF ships back to CONUS. During the backload, the ships' masters and Marine stevedores were to coordinate efforts to identify hazardous materials stowed aboard the MPSs. The type and quantity of these materials were to be properly recorded on a Dangerous Cargo Manifest for presentation to the USCG. Because of a tight backload schedule and security concerns at the port, MPF masters were under pressure to quickly complete the backload. In their haste, masters and stevedores sometimes omitted or incorrectly documented items on the manifest. When two MPF ships returned to CONUS, the USCG discovered several discrepancies with the manifest for which they cited the masters. [Ref. 22]

Yet, military leaders were generally quite sensitive to the requirements of government agencies during the operation. For example, MARFORPAC urged the establishment of washdown sites for redeploying vehicles and equipment to successfully satisfy Department of Agriculture standards. Examples of similar foresight with respect to liaison with authorities abounded during the operation. Occasionally, however, ignorance of customs regulations, documentation requirements, or other procedural formalities caused inconvenience and sometimes operational disruptions.

G. PORT SECURITY

Protection of the port from Somali thieves, refugees, and combatants was a persistent concern for the CMPF, 7th TRANS, and UNOSOM commanders. Each took steps to secure the port perimeter against intruders, but several incidents nevertheless occurred. Although none were very serious, the possibility of sustaining personnel casualties and more significant damage to ships or equipment certainly existed. Whether port security was sufficient to withstand more concerted native incursions was not tested and cannot be known.

According to doctrine, MPF operations were to occur in a "benign" environment - unlike the Mogadishu port. During the offload, explosions and small arms fire could be heard in the vicinity of the port. Coalition security forces discovered Somali ammunition in the port compound. [Ref. 8 p. 29] Natives often breached the compound's wall of containers to steal items from vehicles staged on the harborside pier [Ref. 14]. Intruders even briefly interrupted offload operations on a few occasions [Ref. 11:p. 39]. It took several days for the SPMAGTF to fully control the interlopers [Ref. 8:pp. 38-40]. Even still, the port was never made invulnerable.

The small arms attack on the compound on 23 February 1993 demonstrated that the port could be a target for Somali militants. Fortunately, only minor injuries were sustained and MV *Bonnyman*, then pierside, was undamaged. [Ref. 14] The attack did, however, hasten the backload of MPF ships [Ref. 22].

There was also the problem of stowaways. Although marines were posted at the ramps of all pierside MPF ships, three Somali adolescents managed to get aboard MV

Anderson during the ship's backload. When the ship's crew discovered the stowaways, *Anderson* was already en route to Diego Garcia. Because the British representative would not receive the Somalis at Diego Garcia, the ship was forced to return to Mogadishu to deliver its unwelcome passengers. The security failure cost the ship several days transit time -- and thus a few hundred barrels of fuel. [Ref. 14]

The most notable security-related incident involved the SS *American Osprey* which was struck by rocket-propelled grenades at the pier. The damage to deck equipment and cargo fuel tanks did not endanger the ship nor interrupt its operations. Had the projectile landed elsewhere on the ship, however, injury to personnel or fire might have resulted. Fortunately, the ship merely required a brief period in a shipyard to effect repairs. [Ref. 14] Although MSC applied some pressure to ensure improved security for its ships, it was generally satisfied by the measures taken during UNOSOM II [Ref. 17]

Port security was probably adequate to meet the threats encountered during the several months of operations. That no particularly serious incident occurred seems proof enough. Operations concluded with no loss of life and only minor property loss and damage. However, some of the incidents might have been avoided with tighter measures. Furthermore, the ability of Mogadishu port security to counter a more significant threat remains uncertain.

The analysis of port security and other issues supports the overall evaluation of Mogadishu maritime operations as follows:

1. Operations were always successful in terms of broad mission objectives and mostly successful in meeting planned logistical timelines and other goals.

2. U.S. logistics units were well-prepared to support the operation despite short-notice planning and an unfamiliar environment. This was in large part thanks to the MPF.

3. Most importantly, logistics and transportation managers were able to quickly adapt to theater realities and resolve most problems encountered.

The speed at which U.S. forces completed the occupation and pacification of Somalia could not have been possible without highly effective sealift and sustainment operations. However,

as in all major military operations, there are some aspects to emulate and others to avoid. These are discussed in the next chapter.

IV. LESSONS, RECOMMENDATIONS, AND CONCLUSION

Based on the issues explored previously, this chapter identifies important lessons learned from the conduct of maritime logistics operations at Mogadishu. The chapter furthermore offers recommendations for improving sealift and seaborne sustainment operations of this kind in the future.

A. ELEVEN IMPORTANT LESSONS

The eleven major lessons learned and corresponding suggestions which follow are derived from the successes and failures of operations at Mogadishu.

1. Efficient Movement of Forces Requires a Stable, Well-Developed TPFDD Base

As experienced during the early stages of Operation Restore Hope, a deployment database not tailored for a specific operation may cause serious disruptions. In order to correct a deficient database to reflect operational realities, significant modifications must be made quickly. If improperly managed, however, the process could generate unnecessary database changes and frequent errors. As experienced during the early days of Operation Restore Hope, a unstable TPFDD causes confusion, delays, unnecessary labor, and sometimes wasted sealift.

The best way to avoid these problems, of course, is to prepare a TPFDD base for a certain contingency in advance of deployment operations. As with the Somalia crisis, this is not always possible nor practical. If a tailored database is unavailable, however, the following measures can be taken to control the development process:

1. Establish a comprehensive policy for authorizing database entries applicable to the entire chain of command from the CINC down.

2. Implement procedures for coordinating the efforts of units with "write permission when the authority to make database changes is decentralized.

3. Train JOPES/WWMCCS operators extensively.

4. Rigorously enforce JOPES/WWMCCS procedural discipline

These actions would control the degree to which the authority to make database changes is centralized. They would furthermore encourage cooperation between units with "write authority" and reduce errors and unnecessary changes.

2. Detailed Intelligence Needed for Sealift Operations in Some Locations Cannot Be Found on the Bookshelf

Information helpful in conducting shipping operations at Third World ports may be dated, sparse, or just plain wrong. This was often the experience during the deployment to Mogadishu. Publications written about locations where there has been limited U.S. military experience may be unreliable. Even when reliable information is available, important facts might be omitted, overlooked, or unappreciated. The likely impact of prevailing weather conditions off Somalia, for example, was underestimated until the SS *Green Valley* incident. Inadequate information about port depth, channel obstructions, or unique port features and conditions could easily disrupt operations and even cause disaster.

Having human intelligence sources at the offload port well before the deployment would greatly facilitate planning for sealift operations. The following steps can be taken in this regard:

1. Wherever possible, collect information from credible local officials, port administrators, harbormasters, tug and shipmasters, and pilots familiar with the port.

2. When local expertise is unavailable, as in Mogadishu, dispatch a Survey, Liaison and Reconnaissance Party (SLRP) as early as possible to gather intelligence.

Of course, any SLRP or group of local informants should include experienced shiphandlers and port authorities.

Regardless of the quality of port information, planners should also be aware of the sealift assets available for use in austere ports. If port access by MPF ships or FSSs is thought to be hazardous, the RRF has ships which may be more suitable. Conveniently-sized ships of lesser draft can be activated as substitutes for the standard assets in such situations. [Ref. 17]

3. Military Planners Should Expect to Deploy Everything Needed to Support Operation

Especially in Third World ports, U.S. forces cannot anticipate host nation support. Although Mogadishu may be an extreme case, expecting to encounter modern facilities would be folly. Port infrastructure is likely to be inadequate or nonexistent. Consequently, planners must be prepared to provide all vehicles, equipment, supplies, and, most importantly, expertise necessary to rebuild port infrastructure and reestablish services.

4. Safe and Efficient Sealift and Sustainment Operations Depend on the Rapid Establishment of a Competent Port Authority

As seen in Mogadishu, the timely establishment of effective tug, pilotage, and port control services avoids confusion, delay, and possibly disaster. Having pro-active MSC commanders like the CMPF and COMPSRON TWO as well as experienced mariners greatly facilitates the effort. Another important element is reliable communications between port service personnel and their clients. Furthermore, a system for resolving conflicts among competing port activities is also a key factor in successful port management.

In light of these factors, four specific measures for establishing a more effective port authority are as follows:

1. Maintain a dossier containing names of experienced harbor pilots, harbor-masters, and tug operating companies for quick recall. The U.S. Navy Reserve can provides quality pilots and skilled port control personnel.

2. Assign a flag officer to direct port opening operations. The presence of Admiral Perkins in Mogadishu ensured that port interests were duly represented in the JTF. According to the admiral, "A flag officer [is needed] to say, 'No.'" [Ref. 12]

3. Preposition all communications equipment required for a MSCO with the MPF. MSC is already considering the concept of a deployable "MSCO van" which would contain all materials necessary to make the office self-sufficient including generators, lighting, furniture, and even office supplies. The container could be made almost immediately operational upon being offloaded at a port. [Ref. 22]

4. Establish a clear policy for prioritizing ship movements early and periodically review the policy throughout the operation. A Joint

Transportation Board should thus meet regularly to affirm and adjust priorities. Such a measure keeps port activity in line with operational requirements and helps avoid conflicts.

Together, these measures would save considerable time and effort in developing port services and a control organization.

5. The MPF Is an Invaluable Asset

Large-scale expeditions such as in Somalia require immediate availability of mass quantities of supplies. The MPF satisfies this requirement and thus allows the rapid accumulation of forces in the theater.

It is difficult to conceive how the early military operations in Somalia could have been sustained without the MPF presence. In the first three weeks of operations, the MPF was the nearly exclusive source of fuel, transportation equipment and MREs, and a vital back-up source of water. The delay in the arrival of Army sealift ships and the insufficient number ROWPUs in Somalia further increased total force reliance on the MPF.

Strategists and logisticians, therefore, should not discount the importance of the MPF in future operations. The MPF's absence would likely slow the pace of operations and possibly put forces at risk, at least until other sealift assets arrived from CONUS.

6. Logistics Planners Should Expect to Provide Substantial Support to Coalition Forces

Operation Restore Hope and UNOSOM II demonstrated that forces participating in multinational operations are not necessarily self-sufficient. Furthermore, the U.N. is not always prepared to assist them. The onus therefore falls upon U.S. forces to provide common-item, common-user support upon request of coalition units. Logisticians must therefore consider the requirements of coalition units in scheduling sustainment shipping and setting stock objectives.

7. Timely Deployment of Water Production Units Must Be a High Priority

Failure to deploy a sufficient number of ROWPUs in the theater may cause water shortages and subsequent force vulnerability. Although the MPF and contracted sources can supplement water stocks considerably, the supply is not likely to meet precautionary stock

objectives for a large force. Such was the experience during the first two months of Operation Restore Hope. Logistics planners ought to take special caution to ensure ROWPUs can be offloaded easily and early in the deployment.

8. Establishing a Container Transshipment Service in Lieu of Direct Liner Service May Best Serve Dry Sustainment Cargo Requirements

The container transshipment and shuttle system used to transport sustainment supplies to Mogadishu worked very well. SS *Gopher State,* MV *Strong Virginian*, and the Alexandria transshipment site provided the JTF greater flexibility to control sustainment supply inventories. It also saved MSC the relatively high cost of time charters. A similar system should be considered for use in future operations instead of direct liner or time-charter service.

9. Time-Chartered Ships Require Close Inspection

The capabilities and limitations of ships should be known prior to making any time charter commitment. The case of the *Mediterranean Sky* underscores this point. Based upon this incident and others, a few minimum requirements for time-chartered ships ought to be: (1) functional evaporators, (2) acceptable basic accommodations and sanitary conditions for passengers, and (3) suitable means for proper cargo handling and stowage. This may seem like common sense, but deficiencies are still overlooked. Closer investigation may avoid later surprises.

10. Sensitivity to the Requirements of Government Agencies Saves Time and Inconvenience

Failure of U.S. forces to anticipate and observe certain government requirements can cause inconvenience and possibly disrupt operations. The following are recommendations for avoiding trouble with foreign and U.S. government agencies:

1. Be familiar with procedural formalities required by port authorities.

2. Be aware of customs restrictions affecting personnel in transit to the theater. Obtain all necessary waivers in advance.

3. Anticipate Department of Agriculture standards and take appropriate steps while re-embarking vehicles and equipment on redeploying ships. This

usually entails the establishment of washdown sites and inspection stations at the equipment staging areas.

4. Encourage closer cooperation between shipmasters and stevedores while preparing the Dangerous Cargo Manifest. This precaution will prevent unnecessary friction with USCG inspectors upon a ship's return to CONUS.

Paying greater attention to these minor details may preclude major annoyance in the future.

11. Port Security Is an Important Consideration Even in a "Secure" Environment

Security for ships, personnel, and equipment is a likely concern during operations of the sort conducted in Somalia. Even at well-defended facilities, incidents can still occur. Port personnel and ship crews cannot assume that they are safe from thieves, stowaways and combatants.

Such was the experience at Mogadishu. There were no significant casualties sustained at the port during the operation, but more serious incidents might have easily occurred. That rocket-propelled grenades caused such little damage to SS *American Osprey* is indeed fortunate given the ship's petroleum cargo.

In light of incidents in Mogadishu, the following precautions may improve security while conducting shipping operations at some Third World ports in the future:

1. Encourage greater vigilance among stevadores and ship crewmen, and, if possible, post more sentries to deter stowaways.

2. Assign more patrols to cargo staging areas to guard vehicles and equipment from pilferers.

3. Arrange special security for ships moored close to the scene of hostilities. For example issue flack jackets to crewmen [Ref. 14] and position armored vehicles nearby [Ref. 17].

As in Somalia, it is important for MSC to take an active role in assuring that ships receive adequate attention from security forces assigned to the port.

B. CONCLUSION

History, of course, is valuable only to the extent that it can be applied in the present to benefit the future. It is hoped, therefore, that military strategists and logisticians will heed the lessons learned from maritime operations at Mogadishu to avoid mistakes and repeat successes. Indeed, the opportunities to apply these lessons are likely to be more common. One need only look to recent events in the Caribbean to recognize the significance of the Mogadishu experience. It remains a convenient model for conducting effective sealift and force sustainment operations in a remote, austere environment.

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